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FX

Steve Johnson's



Enigma



DVD FX-stras

50th Anniversary Issue

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Decons

Like many professional model makers, Ronny Gosselin spent a lot of his childhood making models. In Ronny's case it was mostly rubber band-powered flying models. He later took on guitar-making during his college years and graduated as an aircraft maintenance engineer. Ronny is a native of Montreal, Canada, which has become one of the new cities of choice for film producers over the past year. One of his most recent jobs was working under Bill Pearson, supervising the construction of the miniature sets, including a wrecked Colorado City, for John Travolta's *Battlefield Earth*.

GT: Ronny, how did you break into the industry?

Ronny: My first experience on a major production was on *Screamers*. I was doing animatronics for prosthetic wizard Adrien Morot (*Pluto Nash*, *Species II*, *The Assignment*, *Mother Night*, *The Bone Collector*).

After producing many props and special effects for TV and commercials, I came across Gus Ramsden (*The Crow*, *Dune*, etc). Gus hired me as a chief model maker on *Silent Trigger*. His teaching and passion for shooting and building miniatures really inspired me. To this day I refer to him as my mentor. From that moment I started specialising in miniatures. I have been fortunate in that more and more American films are being produced in Montreal.

Destruction of 1/35 scale building.

Deconstructing Colorado

An interview with Ronny Gosselin

geoff topping

GT: Aside from *Battlefield Earth*, what other productions have you worked on?

R: Some of my credits include: *The Bone Collector*, *Sir Arthur Conan Doyle's The Lost World*, *Silent Trigger*, *The Provocator*, *Barney's Great Adventure*, *P.T. Barnum* (TV) and *The Hunger* (TV), to name but a few.

GT: What led to your involvement with *Battlefield Earth*?

R: I was one of the three companies that were short listed by the producers to work as Bill Pearson's right arm. I made sure that my crew, shop and supplies were up to Bill's standards and it worked!

GT: What were your main contributions to the production?

R: I supervised all aspects of the city elements: 1/60 scale establishing city; 1/35 scale collapsible buildings; 1/35 scale high detail street for the *Robert the Fox* chase sequence; 1/24 and 1/12 scale hyper realistic foreground; 1/4 scale breakable smokestack; 1/18 scale car park; 1/60 scale *Psychlo* Bridge; 1/24 scale crushable *Psychlo* Bridge.

The production was based in a former military complex, revamped to facilitate all aspects of the production. I supplied workshop equipment and crew to make an efficient in-house visual effects team. I also became a liaison officer in charge of linking Bill to everything Montreal had to offer, either manpower, supplies or subcontractors.

GT: You were involved with the construction of the Colorado City miniature set. How did you approach this with regards to planning?

R: We constructed buildings and then we started planning. *No kidding!* We just had to go forward, because the workload was so humongous (and it got to be a lot more humongous every week). I was often asked to deliver new models in a matter of days, sometimes even hours.

part was designing different buildings using the same panels.

The 1/60 scale city had six different originals and the 1/35 scale city had three different originals. I sometimes used part of a facade with opaque windows as a trim for other scale buildings.



1/12 scale ruins.

The originals were constructed with *MDF* (medium density fibreboard) and *ABS* sheet. Where windows were to be located I installed acetate. This gave the mold a shiny glass appearance. From these masters molds were pulled. Now came the fun part. The molds were filled with different colour washes and crapping agents (sand, vermiculite, dirt, and peat moss). This gave each cast a unique and dilapidated look. Now came the spray paint, directly into the mold, over the crap (this will become reminiscent of the original finish of the building).

Next came the *Bondo* (*P-38*), which is thinned down with polyester resin to make it a bit more liquidy. After removing the flashing from the windows, *Fibremix* (a mix of resin and fibreglass strands) was applied to the entire back of the mold (obviously covering the window). The *Fibremix* was then covered with another sheet of acetate to control the

thickness and improve the transparency of the windows. *Fibremix* has a rough texture if not covered with something smooth. When cured, the panels are removed from the moulds and are 95% painted and have realistic breakable windows. Panels are then assembled to make a building using *Foamcore* as floors. There you go: a very fast, efficient and inexpensive technique that delivers realistic results.

GT: What materials did you utilise in the construction of the 1/60th scale buildings?

R: My secret technique! (Laughs.) I will give you a complete how to. Materials employed were mostly polyester resin (*Bondo, P-38*), *Foamcore* and a mega load of *Cyano*. All the buildings were constructed using cast panels representing the facades of buildings. All of these facades were then assembled into different shaped buildings. The hard

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Sci-Fi & Fantasy FX International
ISSN: 1470-9821

Publishing dates (2000):
03/11; 01/12.

Printed in the U.K. by Warners Midlands PLC.

Newsstand distribution
Warners Group Publications PLC:
Tel: 01778 393652 Fax: 01788 393668

Comic book stores distribution—
N. America & UK:
Diamond Comic Distributors
1966 Greenspring Drive, Suite 300
Timonium, MD 21093 USA
Tel: (410) 560-7100

Hobby Shop Distribution—U.S & Canada:
Kalmbach Publishing Co.
21027 Crossroads Circle P.O. Box 1612
Waukesha, WI 53187 U.S.A
Tel: (800) 558-1544 toll free or
262-796-8776 extension 818
Fax: 262-796-0126

ADVERTISING RATES: On application to—
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EDITORIAL SUBMISSIONS: Readers are invited to
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e-mail: sci-fi-and-fantasy-models.com

Published in the U.K. by Next Millennium Publishing Limited
Reg. Office: 564 Burnley Road, Crawshawbooth, Rossendale, Lancashire,
BB4 8AJ, U.K. Registered in England and Wales: No. 2933721.

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Fifty—and not a wrinkle in sight...

...I'm talking, of course, about the magazine, *not us personally*.

It has to be said that Messrs Openshaw and Reccia were considerably less prune-like (or is that pear-like?) some eight years ago when first they dipped a cautious toe into the dangerous currents of magazine publication and distribution.

Since that first, fateful, character-forming day when we nervously sat in a bank manager's office with a sketchy plan for the future and one of the spring catches from my battered briefcase flew across the room, nearly taking said manager's eye out and fast endearing him to the pair of us, life has been a constant rollercoaster adventure.

We set out to publish an intelligent magazine that, in these days of fluffy, insubstantial 'quick bites', provided the reader with an alternative they could *chew* rather than lightly browse through. A publication full of facts rather than hot air—one they could actually *read*, put away, come back to at a later date and *still* find something new and interesting to take in and look at. Despite shoals, rapids and quicksands along the way

we've fought constantly to do that.

At this 50th. issue milestone we'd like to sincerely thank our dedicated team of regular reviewers and correspondents who forsake normal lives, rest, recreation and family life to regularly contribute top quality material and photographs to this title. You know we couldn't do it without you guys and we truly appreciate your input.

We'd like to thank our readers, too—those loyal people who decide on a monthly basis that SF&F magazine is their kind of title. We've much, much, *much* more to bring you as a thank you in forthcoming issues.

Well, that's the celebration tea-break over. Time for Dave and I to re-apply the poultices, take the vitamins and *git back to work*. Enjoy our fiftieth issue, people, and we'll see you right here in four weeks with issue 51.

Bless ya!

Mike Reccia, David Openshaw.

PS: Be sure to catch "Director's Cut" this issue—it's your new, regular guide to the FX 'extras' offered with the latest releases.

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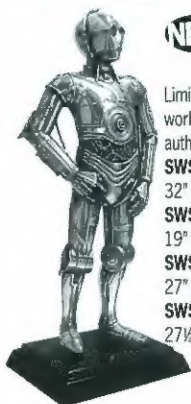
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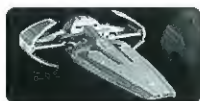
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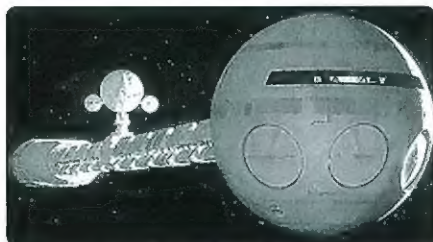
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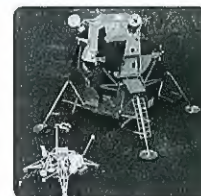


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SFFX at Memorabilia

Meet up with **SFFX** favourites Bob Gould and Tim Hooper at our stand at *Memorabilia* at the NEC, Birmingham, UK, November 25-26th. Bob and Tim will be pleased to chat with you, and you'll have the chance to pick up those rare back issues to complete your collection.

club57.co.uk on line

Club 57 editor bob gould reports

Club 57 moves into the 21st century with a dedicated website that aims to give you an extension to the subscriber's club hardcopy and more.

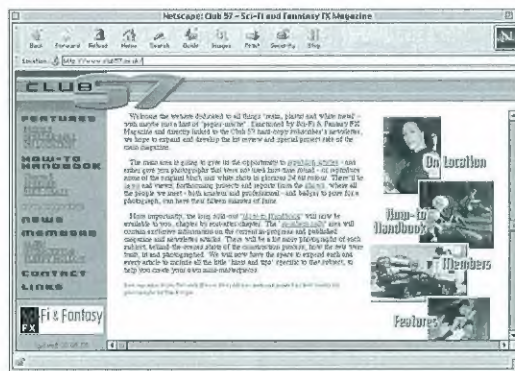
The design is one that allows open access to the main body of the site for anyone—but with the addition of a locked off section that will only be accessible to *Club 57* members via a password which will be issued with each new newsletter. The main area will give us the opportunity to

publish classic magazine articles along with accompanying pictures—which means a lot of photographs that were either taken and not used in the magazine, or printed in black and white, can now be published in glorious 24 bit colour. More importantly, the long sold-out *How-to Handbook* will now be available to you, chapter by sought-after chapter. There will be news and views; forthcoming projects and reports from the shows.

The members only area will contain exclusive information on current in-

progress and published magazine and newsletter articles. There will be lots more photographs of each subject; behind-the-scenes shots of the construction process and shots and info detailing how the sets were built, lit and photographed. We will now have the space to expand each and every article to include all the little hints and tips specific to that subject, to help you create your own mini-masterpieces.

So, instead of surfing the web looking for a modelling site, log directly onto club57.co.uk and stay awhile.



Gladiator bust

N & T Productions' new 1:4 scale resin bust features Russell Crowe as the *Gladiator*. The bust with plinth stands over 10 inches (25cms) tall and retails at £39.00 in kit form or £69.00 assembled and painted by sculptor Neil Simms. *N & T* are also releasing their first full-figure sculpt in the form of Yul Brynner as *The Gunslinger* from Michael Crichton's classic tale of technology gone 'wrong', *Westworld*. The kit comprises a 1:6 scale figure on a western style sidewalk, plus a series of interchangeable faceplates enabling the android to be displayed with 'normal', 'exposed', 'acid-burnt' or 'full-burnt' faces. *N & T* may produce a second figure depicting the fully burnt body—watch this space. The kit should retail at around £65, but for further information on either of the two new kits visit www.nt-productions.com or phone +44(0)191 4563741.



Comet News

Thunderbirds merchandise and offers

Comet are presently offering the three new **Thunderbirds** book titles—*The Complete Book of Thunderbirds*, *Thunderbirds photostory annual 2001* and *FAB Cross-sections* book post free at £32.00.

Comet also have in stock a new Imai 'smoked crystal' *Thunderbird 2* kit with etched fret parts at £35.00 plus £3.00 p&p; a limited edition Imai plated *FAB 1* kit at £29.50 and a limited edition **Thunderbirds** plated *Mole* kit at £29.50. Due for release from Imai in January is a special edition 1/72 scale *Mole* kit with interior, expected to be priced between £43-45. Ring Comet for details.

Tin-Tin Show offer

On display at the Comet stand at *Memorabilia*, November 25-26th., will be a 22" *Classic Porcelains Thunderbirds Tin-Tin* figure with certificate of authenticity signed by Sylvia Anderson at £399.00. New *Jeff Tracy* and *Hood* figures will also be available at the show. In a show-only offer, visitors buying more than one figure can claim 10% discount.

Bitmobile

A-B Models' new 1/8 scale 'Bitmobile', priced between £349-£399, will make its debut at *Memorabilia*. For each

Bitmobile bought from the Comet stand over the weekend (only ten will be made available at the show) Comet will refund each buyer's entrance fee plus hand them a free goodie.

Trek Reference Works.

Soon to hit the UK via Comet are four new Japanese reference guidebooks to *Federation* vessels, each featuring lavish colour and mono shots of the studio miniatures from **Star Trek: The Original Series; The Next Generation; Deep Space Nine** and **Star Trek Voyager**. Books will be priced at £40.00 each plus £3.00 p&p per title. In november Comet will be announcing a new range of limited edition **Star Trek** resin full and conversion kits.

Stop Press:

New *FX Models Nautilus* now available from Comet—comes with accurate set of blueprints. £99.00 plus £5.00 p&p (UK mainland).



To **Sci-Fi & Fantasy FX International**: Congratulations on your 50th, among the best, informative and well documented special effects industry magazine around. See you in another 50 and on.

David Tremont—*The Model Smiths*.



Errata:

Issue 50 of *Sci-Fi and Fantasy FX*.

The side profile shot of the helmet on page 30 captioned "2010 helmet on display at Top Secret in the Hancock Museum... etc" should have read "A shot of *Bowman's* helmet as it is today. It is owned and was restored by aerospace archivist DENNIS GILLIAM, who also took the photo." DENNIS GILLIAM also provided the shot of *Bowman's* flight suit on page 29 and the helmet decal on page 28. We apologise to Mr. Gilliam for the errors and thank him sincerely for his input into our 2001 Special.

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Aliens, spaceships... more? Join me for the Monsters In Motion tour...

lee shargel • photos courtesy MIM



MIM's Terry Fitton.



It was a dark and rainy night. The wind was howling and... Okay, so it was sunny out and the middle of the afternoon on a Tuesday. No matter, I was skulking around the internet in search of a monster. Not just any monster, mind you, but something unusual, something I'd never seen before. That's when I hit upon a website so full of surprises I spent hours perusing its pages. At www.monstersinmotion.com I found a repository of some of the greatest model kits I had ever seen in one place. I was in garage kit heaven. As I surfed through the site I wanted to know more. Who was behind this collection that ranged from Frankenstein's monster to a kit of the rocketship Fireball XL5? There was only one thing for me to do... Go there!

...So I did.

Plenty of Monsters in Placentia

Monsters in Motion is a well stocked retail store located at 330 Orangethorpe Avenue in Placentia, California, USA. They are also located on the web and it's a cyber trip worth taking. If they have it (and they stock just about everything for the modeling enthusiast) you can order it via the Internet and have it delivered to your door. No matter where you live,

if the postman can get there so can *Monsters in Motion*.

I was in California, working on several stories for *SFFX* and knew I had to take time out to visit Terry Fitton, owner and inspiration behind *Monsters in Motion*. I had heard there was a model convention going on right down the street from the store, so off I went. When I arrived at the exhibition hall I was amazed. There were kit dealers of every scale and description and there, just inside the entrance, was the *Monsters in Motion*

booth. It was my first stop. They had several beautifully finished and detailed kits on display including a model of the famous TV and motion picture submarine *Seaview*, exceptional in scale and detail right down to the viewports and *mini-sub* on a sculpted base. I scanned the table and one model particularly caught my attention. As a lifelong admirer of H.G. Wells I was thrilled to see a beautiful rendition of the *Cavorite Sphere* made famous in the motion picture *First Men in the Moon*. The exterior was perfectly detailed and airbrushed in muted colors. The base was a good likeness of the surface of the moon. What really caught my attention, however, was the interior. There were rope ladders and viewports—even the carpet was included. *Monsters in Motion*, I would later learn, are perfectionists with regard to the scale and detailing of their models. I struck up a conversation with Julie Szczy, an artist/illustrator and associate at *Monsters in Motion* and she walked me through some of the subjects on display. Here was a *V8 Interceptor* as featured in the *Mad Max* movies. From the crisp interior (with dashboard and gauges) to the supercharged blower poking through the hood *Monsters in Motion's* model

builders had outdone themselves. I tend to observe models and the kits they are built from with a very critical eye. Is there an abundance of flash? Was the resin full of air bubbles? How about fit? Are seams filled everywhere with modeling putty?

Upon close examination I was pleasantly surprised to see that these models began with exceptionally sculpted masters and the molding technique was carried out with care and precision. As I continued my examination of the display I wondered what must the retail store be like? I made an appointment to meet with Terry Fitton so I could learn firsthand what inspired him to undertake the making of these models. I wandered around the convention hall constantly checking my watch and waiting for the moment I could leave, travel down the street, meet with Terry and surround myself with the goodies of *Monsters in Motion*.

My God! It's Full of Monsters!

The moment arrived and I entered the store. The place was *full* of monsters, aliens, spaceships and much more. For any model enthusiast visiting California, *Monsters in Motion* has got to be on their list of places to see. In this aisle expertly detailed models were on display. In that aisle were kits of every description. Over there, videos, old kits, new kits, accessories—more. I could spend hours in this place. As a matter-of-fact, *I did!* Moving from aisle to aisle I stopped to look at some of the works on display. There was a beautifully finished model of *Mr. Hyde*. The airbrushing of the face and hands was second to none. I have to admit I was a bit envious of the person with the talent to create such exacting works of art.

Next was another one of my all time favorite scenes from a movie—a diorama of the skeleton fight scene from Ray Harryhausen's *Jason and the Argonauts*. I was amazed at the detail; from the expression on the face of *Jason* to the emblems on the shields of his boney attackers. As I continued my tour I came upon a display of *Frankenstein*, another sculpture taken from the silver screen. I thought this a very good likeness of the monster as he displayed his kinder side, taking flowers from the young girl. Asking about this kit I learned it was a prototype awaiting approval. Perhaps you could e-mail *Monsters in Motion* and let them know what you think of it. It certainly gets my seal of approval.

It's all in the details

I'm a stickler for detail when it comes to my choices for building a model, be it from a kit or scratchbuilt. When I set eyes on the next kit I was not disappointed. As a science fiction author and screenwriter, my first choice for a building project usually stems from either one of my novels or from a classic sci-fi movie. I am sure many of you remember *Innerspace*. The micro-miniature vehicle that takes a journey through actor Martin Short's body is another *Monsters in Motion* masterpiece. Every feature has been considered in bringing this kit to the public, from the grappling robotic arms to the under-belly floodlights. The rear view is just as spectacular. The overhead jets are in exacting scale as are the side thrusters.

I had only covered two aisles and there was lots more to see. Turning the corner my eyes beheld another spectacular sight. A perfectly proportioned model of *Penthouse*

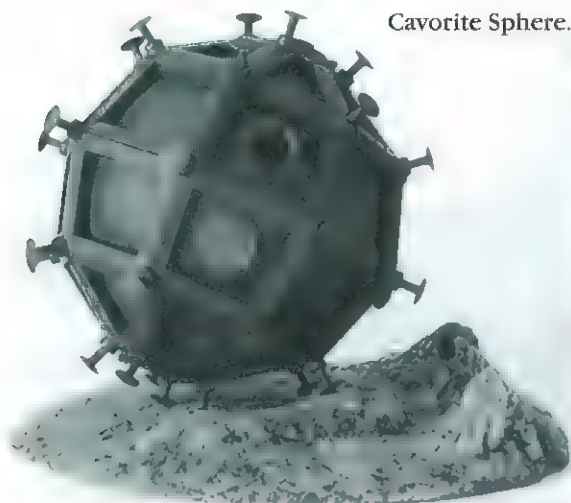
Pet, Julie Strain. I mean this kit was perfect in *every* detail. If you are a serious figure collector this kit is definitely a *must have* for your display case. Another figure on display was *Taarna in Armor*. The details were meticulous, from her long flowing hair to the seemingly razor sharp sword at her side.

The next model to draw my attention was a depiction of the saucership from *Earth vs. The Flying Saucers*. This is another of my favorite Harryhausen movies from the fifties. The model comes displayed on a base with a section of the capital steps to the side. Also right out of the movies is an exact replica of the *Spinner Police Car* from *BladeRunner*. I was told this model is 'rotocast' so the modeler can add fiber-optic lights or even an RC package.

Meet Terry Fitton—Master of Monsters in Motion

When I first spoke with Terry I asked him point blank, "Whatever drove you to get into this business?" His answer was exactly what I had expected. "I love sci-fi and horror movies and I also love kit building. What else could I do but bring the two together under one roof?" *Monsters in Motion* officially began in 1990, but the dream for this fabulous repository of model kits and memorabilia began many years earlier.

Around the time Terry Fitton was three years old he went to see his first movie. It was to have a tremendous effect on his young mind. The movie was *Godzilla*. I suppose while other children were happily watching *Bambi* Terry was dreaming of making monsters and spaceships. For years he labored at sculpting his own creations, modeled after the classic 'B'



Cavorite Sphere.



Manuel molding/casting.



Frankenstein's Monster.

movies of the fifties. Later he became acquainted with what we all considered the bible of horror and sci-fi movies, the magazine *Famous Monsters of Filmland*. As fortune would have it, Terry met and eventually worked for Forrest Ackerman, the editor of that timeless magazine, as a tour guide at Forrie's home in Hollywood. Surrounded by memorabilia from some of the most famous movies of all time, Terry could not help but be influenced by the magic of that place. As time passed, Terry continued practicing his craft, sculpting his creations in resin. Back in the early eighties only a handful of serious modelers were working in resin. There was very little communication between 'Resin-Heads' and so most were unaware that others of the same ilk existed. As Terry explained, "It was difficult to find any decent kits at all back then and most sculptors had only the shelves in their own homes as an outlet to display their work. I wanted to find a place that could be a one-stop-shop for resin and garage kits, but no such place existed. I realized that here was a need that I could fill, so I filled my house with kits and began selling them."

Talk about necessity being the mother of invention—Terry jumped into the garage kit business with both feet, but even as he began selling kits he realized there was an even greater need for quality kits people would be proud to build and own. Not being able to find such a commodity in abundance, he decided to build his own kits

and commission other artists to build them for him. As they say in the business, the rest is modeling history. Wait a minute. Not so fast. The story of *Monsters in Motion* just begins here. As Terry put it so plainly, "The road to retail store-dom was not paved with gold as some might think."

There were some potholes, twists and sharp curves in the road to success. I am happy to report that Terry was able to stay the course and arrive at his destination intact.

Give Me Back My House

So *Monsters in Motion* began life as a dream on the dining room table. It outgrew those surroundings soon enough and quickly filled the family room, basement, bedrooms and, ultimately, the garage. The business was out-growing Terry's home. His wife, seeing the success of her husband's venture, did what any self-respecting wife would do. She demanded her husband: "Give Me Back My House." That was around 1990 and Terry (marriage still intact) packed up his dreams and all the kits in his garage (and the rest of the house) and opened his first retail store. The first kit to be offered as an original from *Monsters in Motion* was *The Omega Man*. From the beginning, Terry made it his goal to see that the art of his models would always be paramount. He had seen too many kits and companies come and go—their demise due to lack of quality in the kits they produced.

Monsters in Motion would not get caught in that trap. The quality of their kits always comes before anything else. From the **Planet of the Apes** spacecraft *Icarus* and *Fireball XL5* to the newest product ready for release, the 1/48th scale *GunStar* from the movie **The Last StarFighter**, there would be no slacking in detail. Every kit produced goes through a rigorous review process before it ever sees the light of day. If approved they are made in limited quantities from the same mold in order to ensure excellence of quality and sharpness of detail.

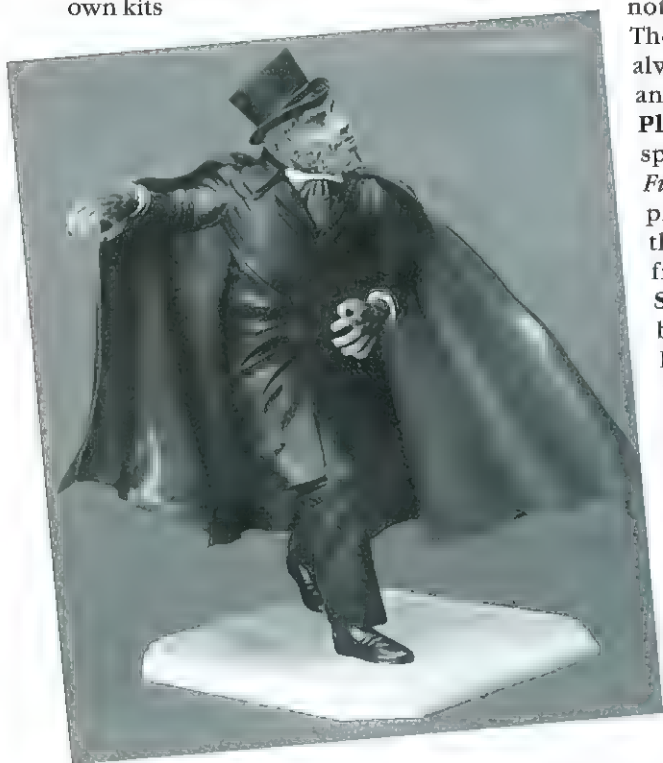
I asked Terry how he decided on a particular

model kit subject. "I have always been intrigued by the classic movies of the fifties and sixties. I think it was a great time to be growing up. Those great films like **Jason and the Argonauts**, **Earth vs. the Flying Saucers** and **Planet of the Apes** offered great modeling subjects but seemed to be too obscure for most of the mainstream model companies. I saw this as a niche that I could fill. Perhaps not in great quantity but certainly in the quality that my customers have come to expect from *Monsters in Motion*." For over ten years Terry has had the same loyal following of modelers from every corner of the globe. And the list keeps on growing.

Presenting—Radiation Theater

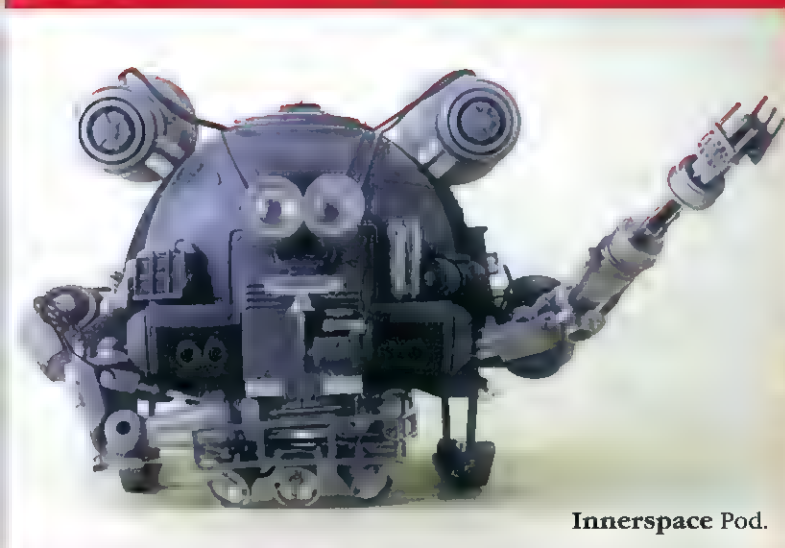
The latest venture for *Monsters in Motion* is *Radiation Theater*. Presented in an old movie house in Placentia, California, *Monsters in Motion* puts on a show that will take you back to the days when theaters were palaces and the movie was something to wait in line for. His first two offerings, **Creature from the Black Lagoon** and **Forbidden Planet**, complete with guest stars from the original productions, were sell-outs. Terry observed that not only did adults appreciate these great nostalgic films but their kids enjoyed them just as much. With models on display, Terry is bringing the garage kit genre to a whole new generation of modelers. Resin is alive and well! For Terry and others, myself included, our therapy is building a museum quality resin kit, adding our own special touches to make it unique and displaying it at home and at shows for everyone to see. With three locations in Placentia, including a workshop and molding house, *Monsters in Motion* has just broken the ice in a field of modeling that has long been overlooked by most modelers. With new kits ready to roll out like the *War Machine* complete with lights and sound to the *Cylon Raider* helmet that actually works, *Monsters in Motion* stands out as a company producing quality resin kits for the serious or neophyte model (or resin-head) enthusiast.

If you're cruising the web or cruisin' the strip in Placentia, California, you must stop in and visit *Monsters in Motion*. Tell them *The Garage Kit Professor* sent you.

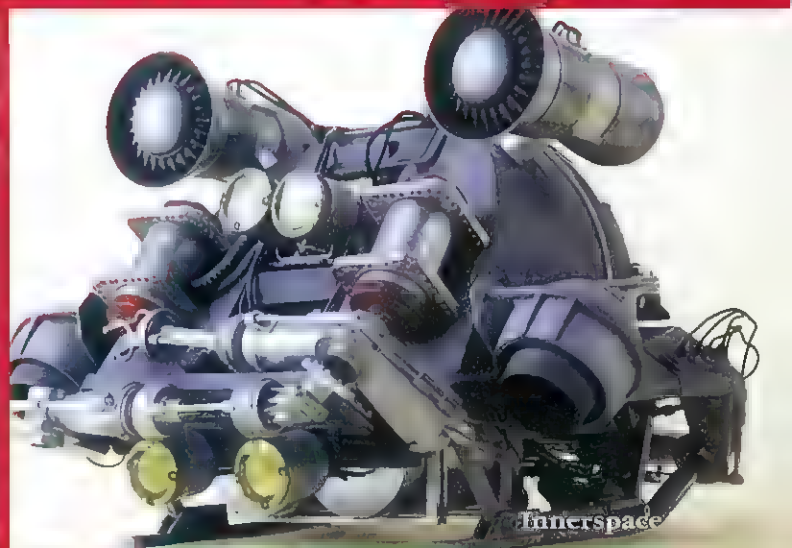




13
Final Battle.



Innerspace Pod.



Earth Vs The Flying Saucers.



1/24th Scale



Spinner Car.



1/48 Gunstar.

Giant!

The making of A-B Models' mammoth 44" Space:1999 Eagle.

Parts six & seven: adding backbone

simon roykirk

At this stage in the construction of A-B's ambitious, large-scale Space:1999 Eagle kit I was beginning to feel quite buoyant. With beak, walkways, central pod and four leg pods already assembled all that lay ahead of me was construction of the fuel tanks, connection of the spine to the front and rear cages and a final assembly of components followed by a weathering and detailing exercise. In this article we'll cover the making of the massive tank/rear engine bell assembly, fabrication of the spine-to-cage 'U-clamps', and connection of the spine to the front and rear frameworks...

Parts required from kit: brass spine framework; oval fuel tanks (2 parts each x 4); round fuel tanks (2 parts each x 4); aluminium 5mm dia fuel line; aluminium 2.5mm dia fuel line; plastic tube; rear engine bells (x 4); brass strip; nuts and bolts.

Spine

The Eagle's spine is supplied as a pre-assembled (soldered) brass tube framework, and preparation here was simply a matter of attacking any excess solder around the joints with the appropriate needle files from all angles. This was a lengthy, time consuming process due to the fact that many of the interior angles are difficult to get at, but I imagine the task, which is a straightforward exercise, would be quite relaxing if carried out over a weekend and without deadlines to meet.

Eight 2.5mm holes (four each side) need to be drilled at either end of the spine to accept the bolts that connect the brass 'U-clamps' that will secure the spine and cage frameworks together. I accomplished this on the drill stand, first 'dry-fitting' the spine against the front and rear cages with the central pod snugly (and

temporarily) in place to gauge and mark exactly where each of the sixteen holes should be located.

Oval Fuel tanks

Compared to some of the challenging tasks we've undertaken thus far in constructing the Eagle assembly of the fuel tanks would, I thought, be a piece of cake—and for the most part it

was. Eight resin tanks form part of the complex engine assembly and engine bell support framework at the rear of the craft—four long 'oval' tanks into which sit the huge engine bells and four smaller, circular tanks which connect in pairs to each other, then to the sides of the engine section framework via metal rod.

The oval tanks are supplied as flawlessly cast, two-part assemblies consisting of a tubular body with an integral pre-drilled and threaded domed end into which an engine bell screws, plus a separate domed end with lug which connects to the rear of the Eagle's framework and locates in a depression machined into the other end of the tank body.

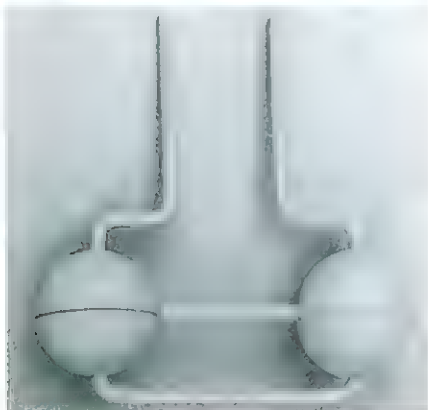
Preparation prior to assembly was simply a matter of sanding the locating surfaces of the domes absolutely flat and removing excess resin on a couple of the domed end



Above: oval tank components—pre-drilled; bodies and separate domed ends.



Above: assembled oval tanks with fuel line and fuel line sheath in place. Below: circular tanks attached to brass rod fuel lines shaped with a vice and hammer.



pieces to allow for the fact that, on two of the bodies, the locating depressions had been drilled in at a slightly off-centre angle. Once the epoxy had gone off I drilled the required 2.5mm diameter hole through each of the attaching point lugs on the drill stand, then cut four 25mm lengths from the 6mm plastic tube supplied. Both ends of each of these tube pieces were then plugged with P38 and sanded smooth. The tube lengths form the raised piping that 'sheaths' the aluminium fuel lines on the oval tanks and, once each plugged end had been drilled to accept the lines, needed to be epoxied between the two oblongs engraved on the surface of each tank.

The instructions tell you to cut fuel line lengths from the 2.5mm aluminium rod supplied (an easy task, as is the bending of the pieces into the required shapes with a little help from a pair of pliers. Note: bend first, THEN cut off the lengths) then to position their ends into the holes drilled in the fuel tanks and the raised piping lengths that have just been epoxied to them. Because of the 90 degree angles of the fuel lines once bent into shape, however, there was no way I could think of to insert the ends of the fuel lines into the drilled holes in both the tank bodies and the raised tube piping with the piping already glued in position against the tanks. I therefore, reluctantly, removed the raised piping (and any glue residue) from the tanks, epoxied a fuel line length in the holes at either end of each section of piping, positioning the assemblies so that the lines' free ends lined up with the drilled holes in the fuel tanks, then epoxied the raised piping with fuel lines in position onto and into the tank bodies as sub-assemblies.

Circular Fuel Tanks

The circular fuel tanks assemble from two halves, one of which features a central 'lip' running around its inner edge. Once these had been epoxied together and any gaps filled with P38 and sanded smooth I drilled the 5mm holes (10mm deep) that would take the connecting rods and aluminium 'fuel lines' as instructed. It was these pipes that caused a slight lull in proceedings. Ever tried to bend 5mm thick aluminium rod by hand? *Easy*, you might think. *Aluminium's a soft metal. Not in 5mm rod form, it's not!* Armed with pliers and as much vein-bulging, hand crunching muscle as I could muster, I only succeeded in putting a graceful curve in the rod

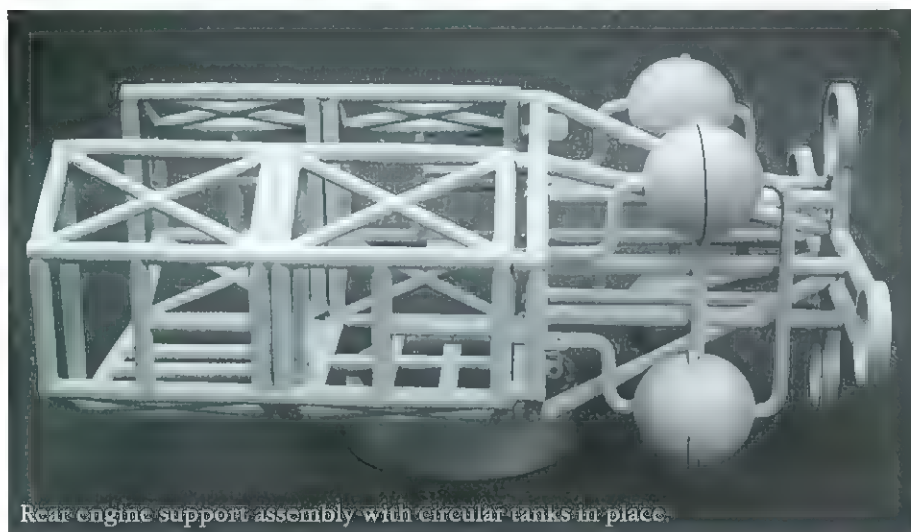
supplied plus an ungraceful kink in an old back injury. Chatting with Bob Smith of A-B Models on the 'phone a few days later I mentioned the problems I'd had and he informed me that a vice and a hammer were the tools required in order to whack the rod into the desired multiple right-angle bend pieces illustrated in the instructions. Having damaged the rod supplied, and unable to find an aluminium replacement, I therefore transported a brass substitute rod bought from the local model shop to Bob's house a couple of weeks later. He then trapped hacksawed lengths of the rod in his vice and literally knocked these into shape with a hammer. Any discrepancies in the angles between either end of each piece were hammered back in line whilst the length was still in the vice. Be advised, modellers, you *will* need both vice and hammer to execute this operation effectively.

Back at the ranch I glued the brass pieces into the holes I had drilled previously in the circular tanks, filled and sanded smooth the areas around the holes and, following a generous spray coat of primer/filler, epoxied the tank groupings to the sides of the rear cage section.

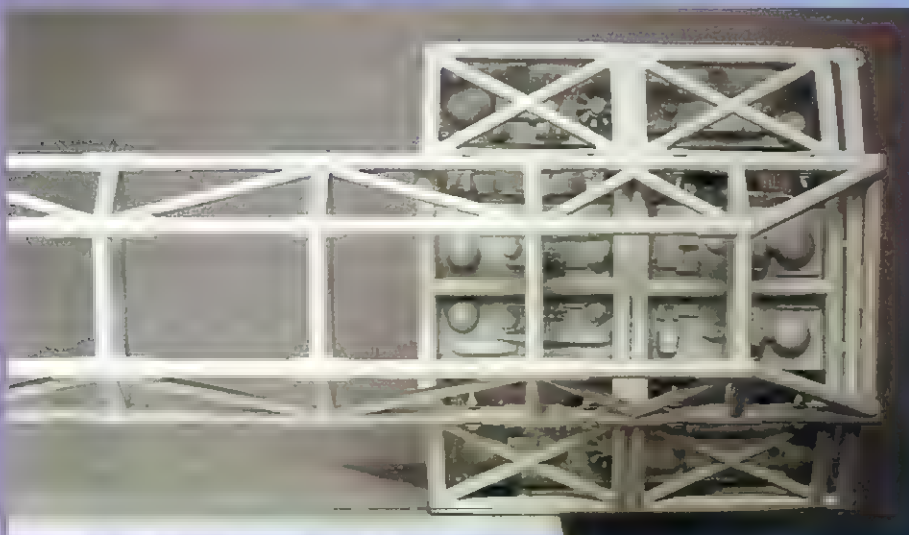
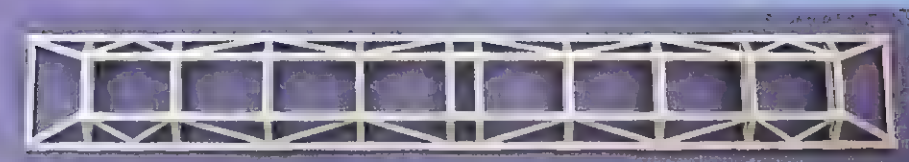
Completing the engine section was now a matter of lining up the four large oval tanks with the four white metal brackets I'd Dremelled into the rear cage's octagonal end plates, inserting a 2mm bolt through the brackets and oval tank end lugs, inserting the pre-drilled aluminium engine bells through the tanks' open end, inserting a bolt and screwing the whole assembly up tight. Two of the four tanks were reluctant to line up properly but were eventually coaxed into position after I'd filed away at their inner faces until they sat properly against the spars that extend from the engine bell cross bar to the end octagonal.

Attaching the spine.

As any student of the *Eagle* spacecraft will inform you, the craft's spine is 'lashed' to its front and rear frameworks via sixteen 'U'-shaped brackets that cradle the cages then bolt through the upper framework, each being held in place via a nut on the inside of the spine's. These brackets are cut and shaped from lengths of brass strip (fairly easy to shape with tin snips and a file) supplied with the kit and the ends of each bracket drilled through so that



Rear engine support assembly with circular tanks in place.



the two holes in each 'clamp' correspond with one of the eight holes drilled in either end of the spine. The instructions tell you to cut each bracket to a length of 32mm then to drill either end of each bracket strip (*before* forming it into the U-shape—accomplished by holding each strip centrally against a

section of the spine and gently pushing it into shape against the curve of the tube) and to line up the holes in the brackets with the holes in the spine, push a bolt through each, add the nut and...*voilà*.

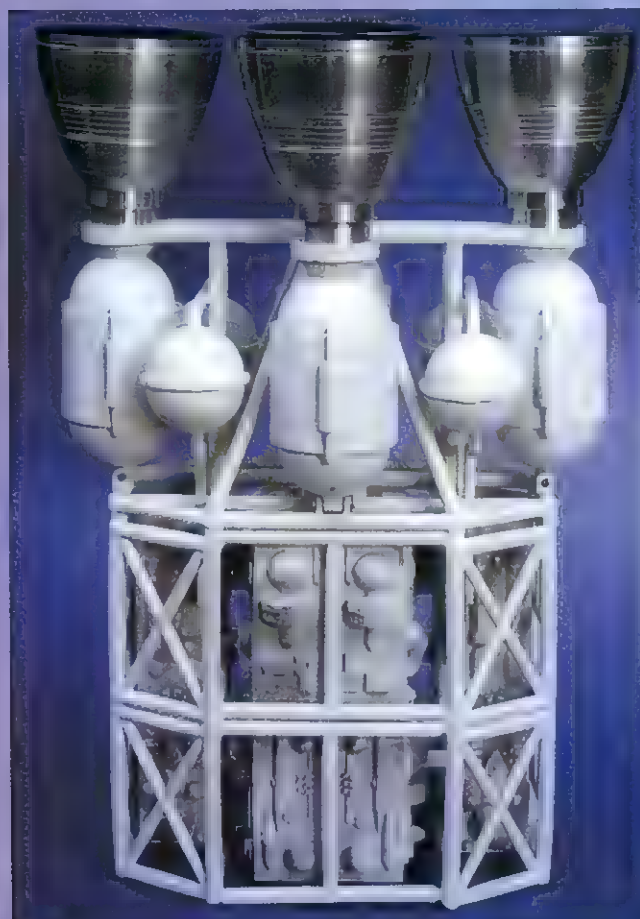
...Well, *not quite*. I found a length of 32mm (which assumes that all parts

involved are perfectly symmetrical and that each hole you drill is dead centre through the horizontal axis of the spine's lower tubing) was not enough to girdle the cage tubing *and* meet up with the holes I'd drilled through the spine. As I'd already cut up the brass strip and couldn't find stocks locally it took a few days to get replacement strip ordered and sent on courtesy of the legendary *Des* at *Manchester Model Shop*. I cut new strips to a guesstimated length of 36mm, then discovered that, due to slight discrepancies in the contours of the white metal cage sections front and rear, each bracket would need to be bent *before* drilling then

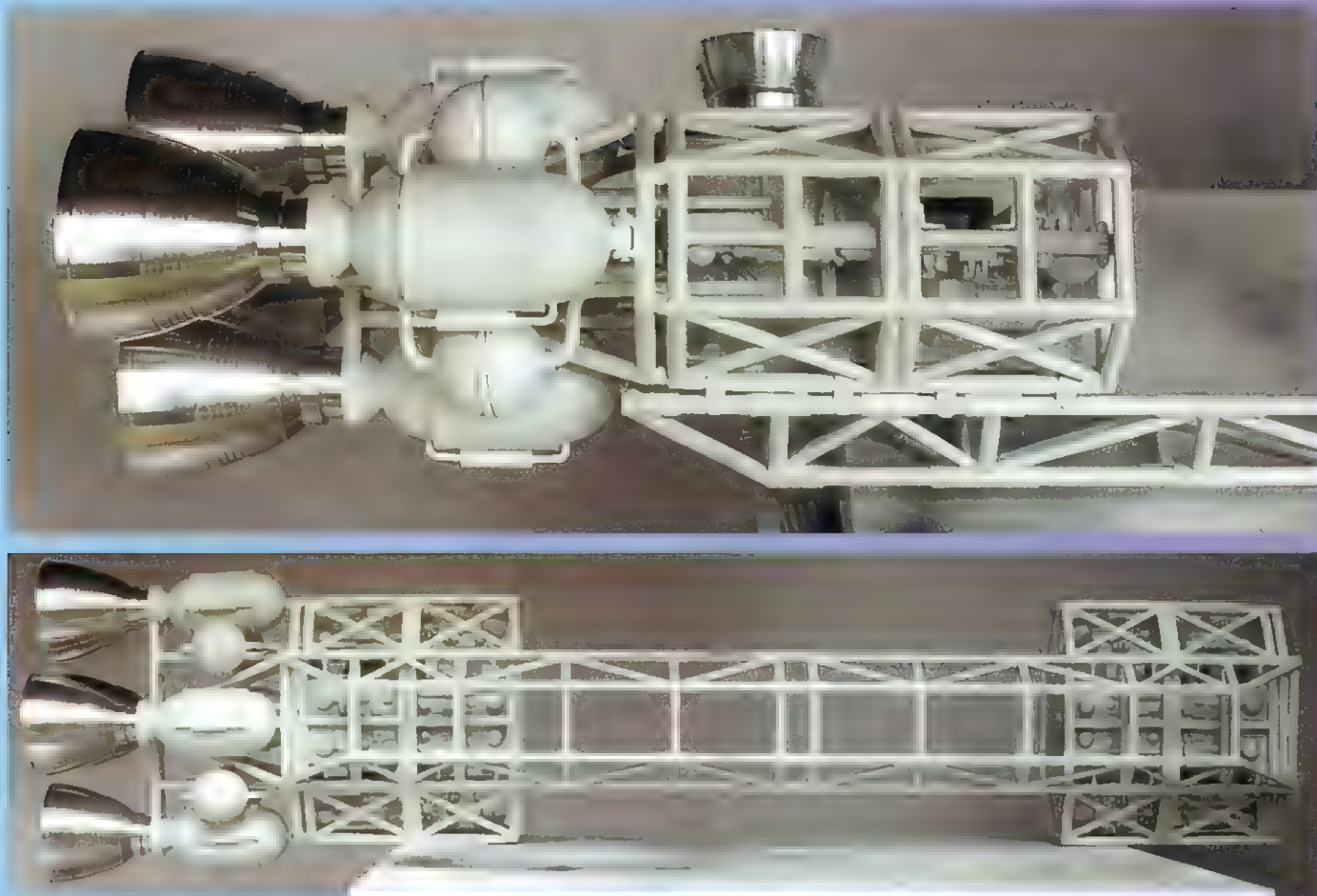
offered up to and measured and marked against its corresponding holes in the spine in order to locate the holes, outside and inside the framework, on each piece accurately.

I therefore first rested the *Eagle's* spine on its two cage sections on the bench top and bent and measured each bracket individually in situ before drilling the holes and rounding off the ends of each strip. This way I could be sure each strip would line up perfectly with its respective holes. As soon as I had a bracket drilled and rounded off I attached it to the spine/front or spine/rear assembly in order to turn the precariously wobbly dry fit into a single assembly I could handle and pick up as quickly as possible (And as infrequently as possible—this is one *heavy* sub-assembly!). Attaching the brackets is an extremely fiddly operation. The spine's framework works against itself in allowing you access to its interior so you can attach the nuts to the bolts. A set of fine screwdrivers and metal tweezers are essential.

Making and locating those sixteen brackets took me the best part of a day and—*boy*—was I relieved when



Top to bottom: cleaned and primed spine; front case bolted to spine; top and side views of completed engine assembly.



Close-up of rear engine assembly attached to spine.

they were all finally in place. I didn't paint the brackets or bolts before assembly as the contortions the assembly goes through so that you can position brackets, thread bolts and tighten nuts punishes paintwork and the whole thing needed careful touch up with primer and gloss top coat after the operation had been successfully completed. Oh yes, and I added a blob of epoxy to the nut end of each bolt to secure the nut in place—believe me, you don't want this baby unscrewing again!

It sounds like I'm knocking the method of assembly here. I'm not. As the original was fixed in this way this is the perfect means of constructing a 1:1 replica. What should be noted, however, is that you almost certainly will *not* be able to follow the instructions to the letter in this area. Measure twice, cut once is the best advice I can give. With the best will (and skill) in the world there is going to be some variation between the dimensions of the white metal cages and the brass spine, plus variations in height and location between the sixteen holes you need to drill in that spine. *Be warned.*

Well—there we have it. *Almost there.* The *Eagle* has now been reduced from a parts line-up of over three hundred pieces to a beak, four legs, a pod, a spine/framework assembly with engines, and a handful of

remaining nuts and bolts. So now, in our fiftieth anniversary issue, we go for it—paint, decals, weathering—the celebratory conclusion to several months work...

Continued on page 38...

Time check (hours—from part five, last issue):

Cleaning up white metal pieces: 3
 Cutting/fixing replacement spacers on octagonal pieces: 2
 Drilling white metal pieces, cutting and inserting brass rod: 1
 Attaching octagonals to cage sides: 1½
 Attaching (soldering) bottom white metal spacers: 5
 Cutting and attaching internal aluminium spacers: 2
 Drilling and inserting pins in rear engine spacer: 2
 Attaching rear engine spacer: 1
 Cleaning up and painting cages: 4

Time check (hours—this issue):

Drilling spine: 1
 Assembling/painting oval fuel tanks/fuel lines: 3
 Assembling/drilling/painting circular fuel tanks/shaping and assembling fuel lines: 3
 Cutting and drilling brass strip: 4
 Attaching spine to front and rear cages: 4

Skill check (techniques needed): Routing (*brembo*), cleaning with wire wool, drilling, cutting brass rod, soldering, shaping fuel lines in vice with hammer.

Safety check: Quality vapour and dust mask essential when working with resin, brass and white metal. Protective goggles required when drilling.

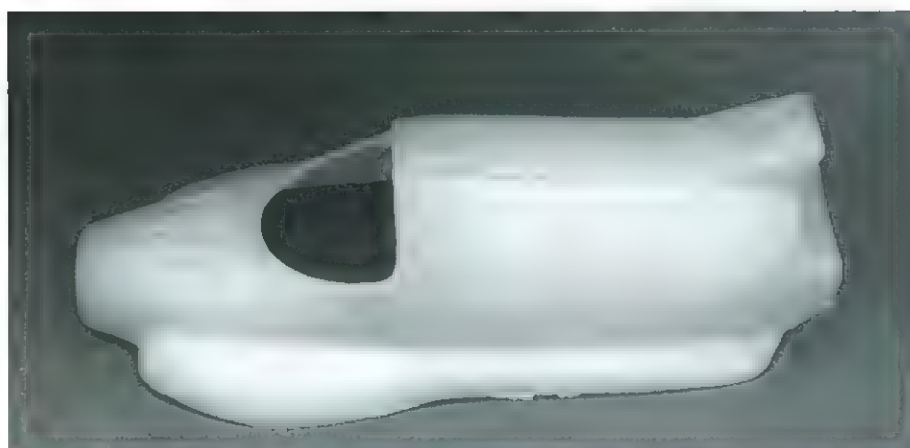
Interceptors

—Immediate Launch

Special Project: the making of ENA's UFO Moonbase Interceptor kit.

Part two—super-accurising the body.

mike reccia



I'm a stickler for accuracy, particularly where kits based on Gerry Anderson subjects are concerned, so, before I began assembly of ENA's studio-scaled new UFO Moonbase Interceptor kit, I enlarged a side profile photograph of one of the actual large-scale studio miniatures on the computer and held the ENA body halves against the print-out so that I could compare notes.

Overall the dimensions are fairly sound. However, the 'spinal ridge' that runs along the top of the craft is too shallow and the outlet faring at the back of this section should be longer, more steeply angled at the back and flare out more from front to back (also cutting back in towards the rear) when viewed from the top. Other anomalies that can quickly be put right are the length of the three cannon depressions on the nose of the craft and the angle of the nose at the front top, which is too square and should have a more bulbous appearance.

Cockpit opening

This solid area of resin needs to be opened up before any accurising work on the *Interceptor* can begin. Using a *Dremel* I therefore employed the tried and tested method of drilling a line of holes, each very close

to the next, around the inner edge of the cockpit opening then dragging the drill bit between each hole to remove the unwanted piece of resin. The opening's jagged edge was then filed and sandpapered smooth until I was happy with its appearance.

Spinal ridge and faring

Accompanying this article are 1:1 scale photographs showing the actual revised dimensions of the sections that need to be altered. If you wish to super-accurise the body on your kit you can trace from these and use them as a template for altering the areas that require reshaping.

The new spine/top faring section was created by first tracing the correct shape of the piece from my photo blow-up then cutting out the traced section. From these dimensions twin cut-outs of thin

plasticard were created and temporarily fixed with a minimum of superglue against the right and left faces of the existing faring. P38 car filler was then spread between the tops of the in-place cut-outs and against the existing (shallower) resin top dimension of the faring to form a revised, angled top. Once the filler had set the temporary *plasticard* sides were removed and more filler was spread across the slight depressions caused by the meeting of the old faring sides with the new top dimensions to create new, larger side contours. Again, these were allowed to set. The new faring was subsequently sanded smooth (checking the new dimensions frequently) and any depressions were filled and the sanding process repeated.

The back of the original faring is a (very) solid rectangle of fibreglass resin and (as the instructions tell you), this needs opening up to represent the outlet built into the studio miniatures. This was again accomplished by drilling a series of holes, each close to the next, with the *Dremel* within a pencil line representing the final inner dimensions of the outlet. Dragging the bit from hole to hole allowed the unwanted rectangle of resin to be removed. Behind the sloping outlet was a further thick wall of resin, and this took some time to *Dremel*, file and sand down so that the outlet walls were of reasonably uniform

Above: top body half with cockpit area removed prior to altering spinal ridge and rear faring. Opposite: layer of filler under nose prior to re-profiling; body halves assembled and filled; recontoured spinal ridge and faring (illustration at 1:1 scale for tracing purposes).



thickness. Filler was then spread over the inner surfaces of these walls and the outlet inner was sanded down to a smooth finish.

The studio miniature's outlet featured a central spar (in reality an extension of the top fin), and four long rectangular detail pieces stuck in at an angle. The resin insert supplied with the kit would not fit the new dimensions of the outlet so

I put it to one side (the curved section that fits over the engine detailing would be used at a later stage) and scratchbuilt a new section that replicated the look of the original. I first backed the outlet with car body repair mesh, then cut and positioned a central spar from thick *plasticard*. Finally I found four identical rectangular kit bits in the spares box and glued these in place, two either side of the spar, at the

angle seen on the studio *Interceptor*.

Next, the *Interceptor*'s spine was given greater depth by laminating a couple of lengths of thick *plasticard*, cut to approximately the right dimensions, across its top with two-part epoxy. Gaps around and under these pieces were then filled with P38 and the new spine was filed and sanded to shape, referring frequently to the blow-up photograph and paying particular attention to the rounded front end to ensure an even finish.

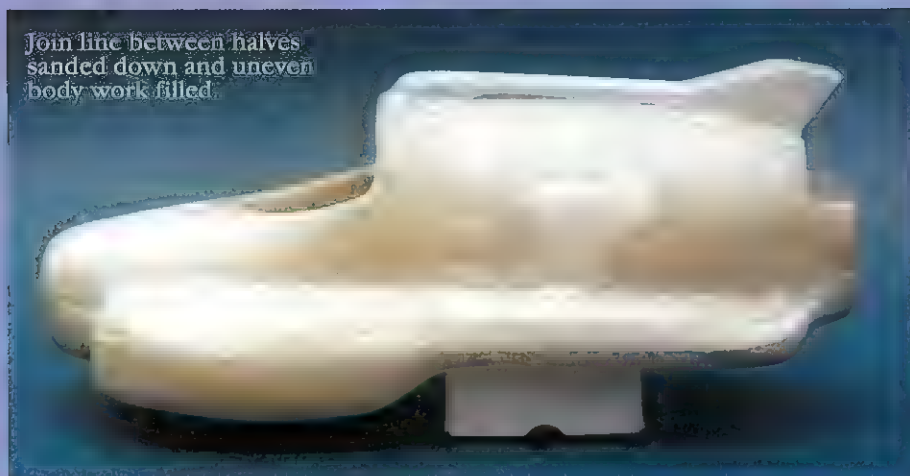
Cannon depressions

Comparing the three cannon 'troughs' with the dimensions of the studio miniature I discovered these were approximately a third too long. To remedy this I first tore up a piece of kitchen towel and doused it in a beaker of water until it was fairly malleable. Then, having marked off the front 'point' line of each 'trough' on the body, I wedged a lump of squeezed out wet paper towel into each depression and curved it inwards to a point at the front end to indicate the approximate inner dimensions of the new shape of each trough. P38 was then spread around the outside of each towel wedge and allowed to dry. Once the filler had set the wedges could be removed, leaving the rough shape of the new trough in each depression. Through careful and repeated sanding and filling the new depressions were shaped and smoothed until I was satisfied with their appearance (the actual cannon barrels will be added at a later stage).

A rounder nose

The *Interceptor* features more curves than angles, the nose being no exception. To reshape this area to the correct dimensions I first turned over the body half and spread filler to a reasonable thickness in the depression under the nose on the





Join line between halves
sanded down and uneven
body work filled



Revised cannon recesses
reduced to correct dimensions

inside of the cast. As luck would have it the nose on my *Interceptor* was thick enough to stand a brutal sanding down but, had it been thinner, the resin beneath would have acted as a new surface had I broken through the body skin. Shaping the nose was simply a matter of taking a rough file and working around the area, removing material until I was happy with the general shape. At that point I sanded and filled the new dimensions until the surface was uniform and smooth.

Body halves

The instructions depict the body split into two halves *vertically*. In actuality the kit is split *horizontally* and the instructions tell you not to remove any of the jagged material from around the edges of the halves as they should result in the correct overall dimensions when joined together. Unfortunately they don't and, once again, I referred to the photo enlargement to determine how deep the *Interceptor's* body should really be. The instructions suggest that a lip

of *plasticard* be built up along the inner joining surfaces of one body half so that the other half has something to grip against and so that the body join line can be filled around the outside once the halves have been glued together. A lip is indeed required, but *plasticard*, however thin, tends not to flex correctly within compound curves, so I decided to opt for a simpler, faster method of joining the halves together, which proved far more effective.

Masking tape girdle

Using strips of one inch masking tape I applied these inside the joining edge of the body top, leaving half the width of the tape sticking out of the body. I then held the bottom half in place against the exposed tape and pushed my other hand through the cockpit opening in the top half so that I could smooth down the overlap of tape against the body's bottom half with my fingers. I added more tape inside the join line of the two halves until I was happy that I had created a fairly secure temporary join. Using



Scratchbuilt rear faring detail—mesh and four rectangular kit bits plus a central plasticard spar.

masking tape also allowed me to twist and turn the *Interceptor* as I taped the halves together, checking the lines and repositioning the body parts for a better fit if any section was slightly out of true.

Once happy with the fit, I slapped considerable amounts of *P38* into and around the outer join, roughly building up the various dimensions needed at the join line all around the *Interceptor*. Once hard, I sanded back the filler to the line with file and sandpaper, shaping up the various dimensions as I went.

Bumpy body

As mentioned in part one, there is an uneven texture to the fibreglass/resin body (not present on any of the smooth auxiliary parts). My last task in accurising the body was therefore to skim it several times with *P38* filler, sanding it back each time until I had obtained an overall evenness and smoothness to the body skin.

Next issue we'll tackle the large rear engine and side jet assemblies.



May you long continue to
orbit our dreams
—Bill Pearson

Bill's Starbug.

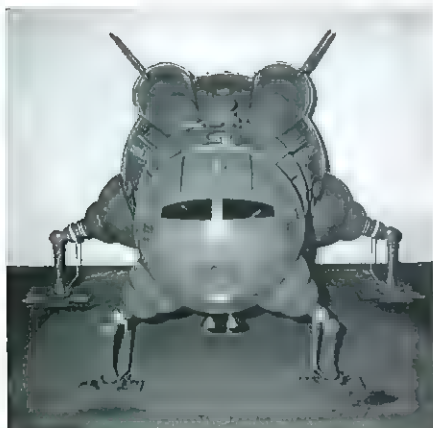


Starbug Resurrection

photo-special exclusive by geoff topping

The recent confirmation that Red Dwarf creators Grant Naylor Productions are working on the script for the Red Dwarf movie has been welcomed by fans around the world. So imagine my surprise when, whilst using Bill Pearson's workshop at Shepperton Studios recently, Bill told me he was popping out to get some bits and pieces as he was about to start making a Starbug. "So they've pushed the film ahead?" I asked. Alas, a shake of Bill's head proved this was not the case.

It turned out that the Bug was to be built as a prize for the UK's BBC TV show *Whatever You Want*, which is presented by Billy Raskin. Three Red Dwarf fans would battle it out, answering questions on the show, with the goal of winning the fantastic prize of working on the Red Dwarf movie. The Starbug reproduction was an additional prize, which would only be revealed to the winner at the last minute.



Bill was supplied with an original BBC-made *Starbug*, which was somewhat the worse for wear and which he used as a sizing reference for the main component pieces. Other visual reference material used included issue 2 of *Sci-Fi & Fantasy Models* and several official *Red Dwarf* books. The *Bug* was constructed mostly of *EMA*, with kit and toy pieces adding detail to the craft.

The pictures accompanying this article were taken hurriedly on a rainy day back in April, before I assisted Bill and *Red Dwarf* effects supervisor Jim Francis in loading the finished *Starbug* into the back of a *Range Rover* for its final journey up to *BBC White City*.

The show was aired on *BBC1* on the 13th May, 2000 and the winner seemed somewhat overwhelmed as the prize *Bug* made its descent on wires from the studio while gerber pyros provided engine exhausts.

Geoff Topping © 2000

Photographs:

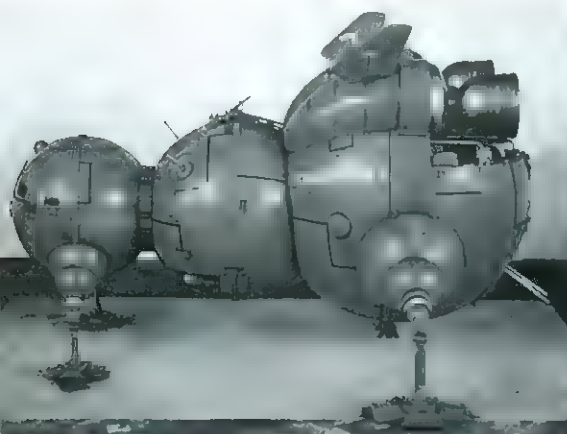
Nos. 1-4 © 2000 Bill Pearson;

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Engine Detail.





Anniversary Issue

The other FX magazines don't tell you about FX, they tell you about the movie. Sci-Fi & Fantasy FX is the only magazine presently available on the market, that teaches and explains how to do things

—Bob Keen

Coming up in issue 51 of Sci-Fi and Fantasy FX

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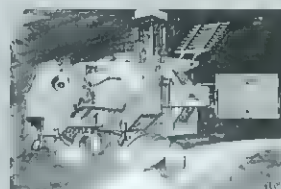


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Huber with his cast from *Being John Malkovich*

What inspired you to enter this art form?

I was mostly motivated by the television shows of the period. **Kukla, Fran and Ollie** and **Howdy Doody** were two shows that I was very enamored with and they were very influential on me. I was extremely shy as a child and my mother gave me a hand puppet when I was three years old. That gave me an outlet for my expression. I could hide behind the sofa and do shows with this hand puppet. Later, I was given other hand puppets as gifts. That was the start of it for me. I enjoyed being in the background and projecting a personality through the puppets.

Do you recall the first time you performed in front of an audience? I was seven years old and the show was for neighborhood children and family groups.

The Puppet

A conversation with *Being John Malkovich*

paul taglianetti

Phillip Huber has been a puppeteer/actor/performer for over thirty years. Recently his work as an artist was featured in last year's surprise comedy hit *Being John Malkovich*, directed by music video director Spike Jonze. The 'Dance of Despair' sequence during the opening titles of the film and the 'Heloise and Abelard' street performance, in which he manipulated bizarre marionette recreations of John Cusack and Katherine Keener, were some of the highlights of this beautifully surreal film. Huber also operates The Huber Marionettes (with director/choreographer David Alexander); a traveling showcase of his work where he displays original performances with his own custom designed marionettes.

The Huber Marionettes have been seen on the *Tonight* show, CNN *Showbiz Today*, in the pre-Broadway tour of *Busker Alley* and in their own touring show, *Suspended Animation*. In this age of computer generated effects created by legions of artists, Huber's singular talents stand out as

an example of an unfiltered visual form, created solely by the human hand.

How long have you been working as a puppeteer?

I've been a professional for 32 years.

Did you construct your own puppets at first?

No. I was modifying commercial puppets. I was adding bits and pieces to the costumes. But they were hand puppets so they were very simple. When I was eleven or twelve I started experimenting with marionettes. My very first attempts were re-building stuffed toys. I would build a wooden skeleton (armature) and stick it inside a stuffed toy and create a marionette. It wasn't until I was fifteen years old that I started to truly build marionettes from scratch. I learned from library books only. There were no professional puppeteers where I lived, a small town in Illinois. So I got all the books I could and just started by 'trial and error' techniques of construction. I continued on from there and started touring professionally. I created a variety show and performed it while I attended high school and college.

Did you attend an arts college?

It was a small liberal arts college—Principia in southern Illinois. The great thing about it was they allowed me a great deal of course flexibility. I was able to create my own curriculum. They allowed me to teach a course on puppetry and to create (for my senior drama project) a huge puppet production of Mozart's *The Magic Flute*. For that project, I built over twenty five marionettes and trained six novice puppeteers and designed and supervised the building of a double-bridge marionette stage. It was a huge project for me. I think I learned what *NOT* to do from the experience as much as what to do correctly.

When I was fifteen I discovered a national organization called *The Puppeteers of America*, and I



John Cusack and Katherine Keener marionettes

Were you ever involved with any other media other than stage performances?

Three days after graduation from college I was offered a job with a professional puppeteer in California, Tony Urbano. At the time he was doing the puppetry for a TV show called *Dusty's Treehouse*. It was syndicated and appeared all over the U.S. I performed several times on that show. [Tony] was also involved with a lot of television commercials and I worked on a great many of them using all kinds of puppetry. There were even a couple of times where he was doing special effects for low-budget horror films—mostly involving bats. It was just on the fringe of what you would call special effects.

How was the experience of working on films and commercials different from the stage performances?

Well, I enjoyed every experience I was involved with. I am extremely patient. In film, patience is the number one thing you need. I realized very early on that film and commercials involve a great amount of sitting around and waiting for the next shot to be set up.

Around that time what other areas or mediums did you work in?

I appeared as a variety performer on a number of TV shows. I appeared on the *Tonight Show*. I worked on *The Muppets & John Denver Christmas Special* that they did in 1979. So I continued to have a lot of experiences in other areas of

Master

puppeteer Phillip Huber

joined. They published a periodical called *The Puppetry Journal* and for the first time I was able to read about professional puppeteers. Once a year they would hold a festival. I attended my very first festival in St. Louis. There, I met professional puppeteers for the first time and was able to talk with them. They offered helpful encouragement and guidance. They saw my first puppets and gave me advice. That was a major turning point for me. I was really inspired by some of those puppeteers, many of which were at the end of their careers at that point. One of them was Frank Paris, a puppeteer who worked all over the world. He was famous for working at *Radio City Music Hall* and had rather large marionettes. He always worked solo in what is called 'cabaret style'. He was right out in front with the puppets. The spotlight was on the puppet and he was dressed in black. He was a great inspiration to me.



Abelard marionette

puppetry. My focus after leaving Urbano was primarily on marionettes. Marionettes are much more difficult to use in the medium of film and television. They don't seem to be in demand very much now. Especially, because the *Muppets* have become such a great success. Unfortunately producers lose any sense of imagination regarding other kinds of puppetry that may work for them. I quickly found that whenever I went into a meeting [with a producer] to discuss the usage of puppets in a commercial or television show, the first thing out of the producer's mouth was, "We want a *Muppet*-like character." Even though Henson has been such a wonderful influence on puppetry, there is also that phenomenon when something becomes so successful that it completely takes over the art form. Suddenly everything became hand and rod puppets.

How were you approached to work on BJM?

About a year before filming began, my office manager was requested to send videotape [of my work] to the Production Company. We didn't hear anything from them for several months. Then, three months before they were going to start to shoot the film, [the producers] called around to various puppeteers in LA. At some point they called my office and they asked if they could come in and see my workshop and talk with me. They were so impressed with what they saw they basically offered me the job on the spot. The problem was the puppets needed to be completed and in the hands of the actors within only three weeks. Not only because the actors needed to get comfortable with the puppets but so the producers could decide how the puppet scenes would work within the film. It was just not enough time. It takes me about 200-400 hours to complete just one marionette. Also, I had other commitments.

I had just completed [a tour] in Paris right before this interview. It turned out [the producers] didn't feel they could work around my schedule. So they went out and searched for other people to build the puppets. They found another company [*Images in Motion*]. This company had only built stop-motion puppets. They had no experience with marionettes. They did have experience with all the latest building materials and they made the marionettes in casting resin. They

John Cusack marionette on stage.



were able to complete the puppets on time and within the film's budget.

I didn't hear anything more [from the Production Company] for about six months and then they called me and said they needed me to work the puppets for some scenes. I told them I had to examine the puppets first because marionettes are built to do specific movements. The producers sent me a video of *John Malkovich* doing the *Dance of Despair*, which they wanted duplicated with the marionette. I saw that they had chosen movements which were virtually impossible to duplicate with a marionette—forward summersaults, back handsprings, wall-walks, very rapid movements and sudden stops. All of these are the worst possible things to attempt with a marionette. But I looked at the puppets and decided I could modify them and attempt the movements. I was really unsure about the summersault. I felt they would have to cut away halfway through the move so I could untangle the puppet and bring it up to a standing position. Later the director [Jonze] said he did not want to do that. He wanted the summersault and the back handspring to be all in one movement. That was the biggest

challenge for me technically. I literally had to modify every joint in the puppet. I had about six and a half weeks to do all the modifications and work out the movements. They put up the entire set in my garage so I could rehearse easily.

That was the only way I agreed to take on the project, if they allowed me plenty of time to do this. All principal photography was finished, so they gave me total freedom to complete this. They scheduled the puppet shoot when I was ready.

What did you think of the work that was done on the Marionettes by Images in Motion?

I thought they did a beautiful job! Absolutely incredible considering they had never worked with marionettes before. Unfortunately, they were not aware of what the choreography would be like. That is a crucial factor. It's something that producers or directors don't really understand when they decide to use puppetry. You really must know what the final concept will be when you start the building process.

How were the marionettes articulated?

The only special joints were articulated toes on the feet, which was my recommendation to the director, early on. (Jonze) had picked my brain at the beginning and asked me what should be put into the puppets. I had a marionette with articulated toes that enabled it to go into a kneeling position very comfortably. The other thing they wanted was face animation. I have marionettes with what's called 'double eye animation'. That means the eyeballs are capable of moving side to side and with separate eyelids that will slide over them to close. The producers wanted this in these tiny marionettes. The marionettes are only twenty four inches tall. It must have been a great challenge for *Images in Motion* to build that animation into the heads. And it was extremely fragile. I was repairing it constantly. When you make something that tiny, it is so delicate that any shock will mess it up.

We were working on the *Heloise and Abelard* scene (which was written for me to perform, after they saw what I did with the *Dance of Despair*). We were filming the long shot exterior scenes first with John Cusack holding the puppets. When he got punched, there were a couple of takes where he actually threw the puppets in the air.

They slammed against the building behind him and then slammed onto the concrete. I had to pick up these puppets after each take, untangle and reset them and put them back into the stage to shoot another take. The trouble was, the next week we would be shooting all the close-ups and I was going to be doing all this delicate manipulation with the same marionettes. Needless to say, I had to spend several days repairing the puppets. On that take when [Cusack] smashed the puppet against the building, the puppet's eye mechanism fell into the back of its head. It was a good thing they were long shots so you couldn't see that *Heloise* looked like a zombie! (Laughs.)

How many marionettes were made for the film?

I modified four of them. There were seven puppets total.

The opening of the film features the Dance of Despair—an incredibly lifelike interpretive dance with marionettes. How long did it take to film?

That sequence by itself took six days to shoot.

How did the director set it up? Did you perform it straight through with multiple cameras?

[Jonze] had only one camera. He wanted to shoot in sequence. I told him that would be very difficult because at certain points I would have to stop and re-string the marionettes. So, it meant that sequence would be impossible to shoot in real time. It was shot in segments and not in order. The first part of *Dance* that was shot was the marionette hitting a drinking glass off a table to smash a mirror. That was real! It took three operators to perform that. One operator had to pull the string that guides the drinking glass into the mirror. One person had to assist me by pulling a string that swung the puppet's arm horizontally. I manipulated the rest of the puppet's movements leading up to the grab of the glass. We all had to work in perfect unison. We had to shoot twenty eight takes or so before we got it.

Have people approached you and asked if there were any post effects/digital work done with the puppets? If none, are people surprised by that?

They have. The majority of people think there was some digital enhancement. They are surprised to discover there was none.

The only camera trick used was in a shot which required a puppet to freeze in a pose. That was difficult because the puppet was moving too quickly to stop completely on cue. Marionettes don't stop dead in their tracks if they have been moving quickly because they are basically a pendulum. We solved the problem by starting in the final pose. I analyzed all the movements leading up to the pose and performed it in reverse and they shot it in reverse. This was only about three seconds in length but it was pure puppeteering anyway.

There is a (fake) documentary in the film where Malkovich (Controlled by Cusack's character) is teaching a class of students how to perform as puppeteers. He instructs one student to 'act' with the puppet. Do you agree with that philosophy?

It's like method acting taken to the extreme. I do think the puppeteer needs to be an actor and I do think you (as a performer) need to think about your performance in order to make it work. You have to be involved with the character and become absorbed into it. I don't think you

physically have to weep in order to make the puppet weep. That is a step that I wouldn't take. Quite often, when I am operating a marionette, I am feeling the emotions the marionette is feeling. What I am trying *NOT* to do is express it on my face. I try to keep it internal. Yes, a puppeteer has to be a good actor. Is a good actor necessarily a good puppeteer? The reverse is not always true. A good puppeteer has a personality that doesn't mind stepping into the background. Most actors like to be in the foreground and take center stage and that's where the puppet is supposed to be.

Based on the success on this film, would you continue to work on other films given the right opportunity?

Yes, if I had the right opportunity and the right circumstances I would be happy to. I enjoyed every minute of making (the film). It was extremely challenging. There were times when it was extremely frustrating, but ultimately it was an incredible learning experience.

Note: You can find out more information about the Huber Marionettes at:
www.HuberMarionettes.com

Huber Marionettes,
697 Rio Grande,
Pasadena, CA 91104, USA.

Or E-mail at: Huberpuppet@aol.com

Special Thanks to David Alexander and Phillip Huber. Photos courtesy of Suspended Animation and from the collection of the author.



Gantry work for *Lost In Space*

done on a 'next day' service, hence the 'timescale' reference.

The method involves taking the artwork and converting it into a phototool (a positive film that is representative of the original graphic image) which is then placed onto a sheet of metal that has a photosensitive, acid resistant coating. After exposure to ultra violet light, the image is fixed onto the surface of the metal. The unexposed resist can then be washed off, leaving an exact copy of the artwork on the metal. The metal sheet is then passed on a conveyer through an acid etching machine, where a hot spray of acid gradually eats away the spaces between the image, eventually leaving the final exposed image. The method etches equally each side of the metal, therefore surface detail can be half etched into either side of the image to

The Fourth Dimension is Timescale

An insight into the 4D Modelshop

andrew ferron with bob gould and tim hooper

The 4D Modelshop, based in central London, offers a range of products and services to the model maker, both amateur and professional. The business is approaching its tenth birthday and has grown from a one-man band to a permanent staff of over twenty five. The retail shop stocks in the region of 5000 model making materials, tools and accessories, whilst the manufacturing facility offers a range of custom services and supplies, including white metal and resin casting, acid etching and the production of custom dry transfers and custom scenics, all of which have been used within the film industry.

I have worked for 4D since the early days and it's a job that is never dull. I started working in custom acid etching, then in casting, there was even a spell in tree making. Now, I'm on the road advising schools, colleges, universities and clients alike. We have clients all over the world, from New Zealand, the Middle East and Europe to the United States. Our clients are involved in many different industries, film and television; design; architecture; toys; hobbies; art and craft. The reason for such a broad

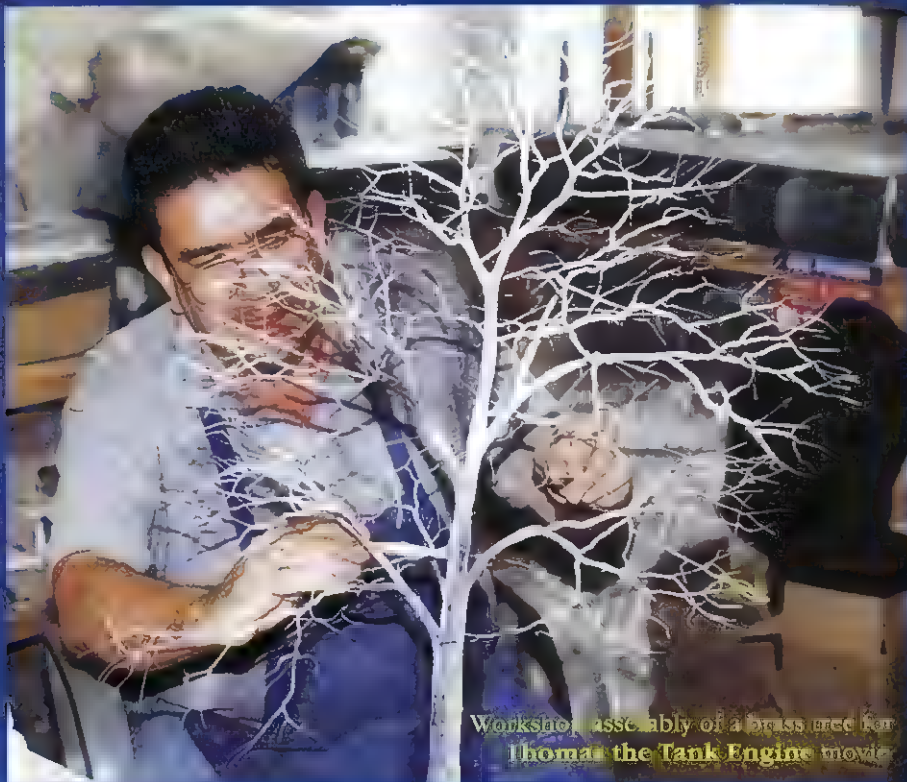
customer base is purely because of our unique services. Model making is now even part of the British Schools National Curriculum. Hence, 4D have become heavily involved with schools, colleges and universities through lectures and sponsorship.

The most sought after service 4D offer is acid etching, which is a process that turns drawings or sketches from black and white images into frets of brass, nickel silver or phosphor bronze. All of this can be

produce recessed or raised detail. An amazing degree of detail can be accomplished; even a line width of just 0.15mm—6 thousandth of an inch—can be achieved.

Model-makers within the film industry, who have to produce highly detailed models, often at many scales, use this method to produce much of the finer detailing. During the shooting of special effects sequences it is common for the scene to be shot a number of times at different scales, therefore a number of identical models are required. As the acid etching method uses the same original artwork, which can be reduced or enlarged photographically, it is the most economic—an A4 sheet can be etched for as little as £20—and reliable way for the model-maker to produce a series of identical models. This is especially useful where pyrotechnics are involved.

Acid etching can also create three-dimensional objects. As an example 4D produce their own range of finely



Workshop assembly of a brass tree for **Thomas the Tank Engine** movie



detailed brass trees. The method involves etching a two dimensional skeleton of a tree, detailing the trunk, branches and twigs and then twisting it into a three dimensional shape. This can then be covered with synthetic foliage to produce 'probably the finest detailed scale trees in the world'. They are used within the film and TV industry when constructing any model landscape. We recently produced a dozen 600mm (24") trees, each with individually brass etched leaves, for the recently released **Thomas the Tank Engine** live action/animated

film lensed in Canada. Also, for the **Bond** film **Goldeneye**, the scenics workshop produced over 4000 trees for a model used in the opening scene—a snowy valley—where **Bond** had to dive into a falling plane to make good his escape. We even sell model palm trees to the Arabs and pines to the Norwegians!

We now hope that the American model making market will benefit from some of these services, with the introduction of our new web site. Yes, you've guessed it—HYPERLINK <http://www.model-trees.com>

Goldeneye is not the only **Bond** film 4D has worked on. The custom transfer service, which can produce single or full colour, photo quality dry transfers, supplied a series of bullet holes for the opening scene of **The World is not Enough**; the dials on **Bond's** speedboat, for the close up shots on the River Thames; decals and cockpit detail for the **Mig** fighters; Russian bombs; nuclear device key circuitry and even detailing for **Bond's** handgun, the **Walther PPK**.

Other etched items include all of the radiation badges and computer circuit boards, as well as the scenics for the biosphere, featured in **Event Horizon**.

For **The Avengers** movie, we supplied all of the 1:10 architectural detailing for the frozen **Trafalgar Square** scenes and the etched spiral staircase for the fight scene inside the water tower. We were even asked to cast 1:10 pipework—made especially to explode.

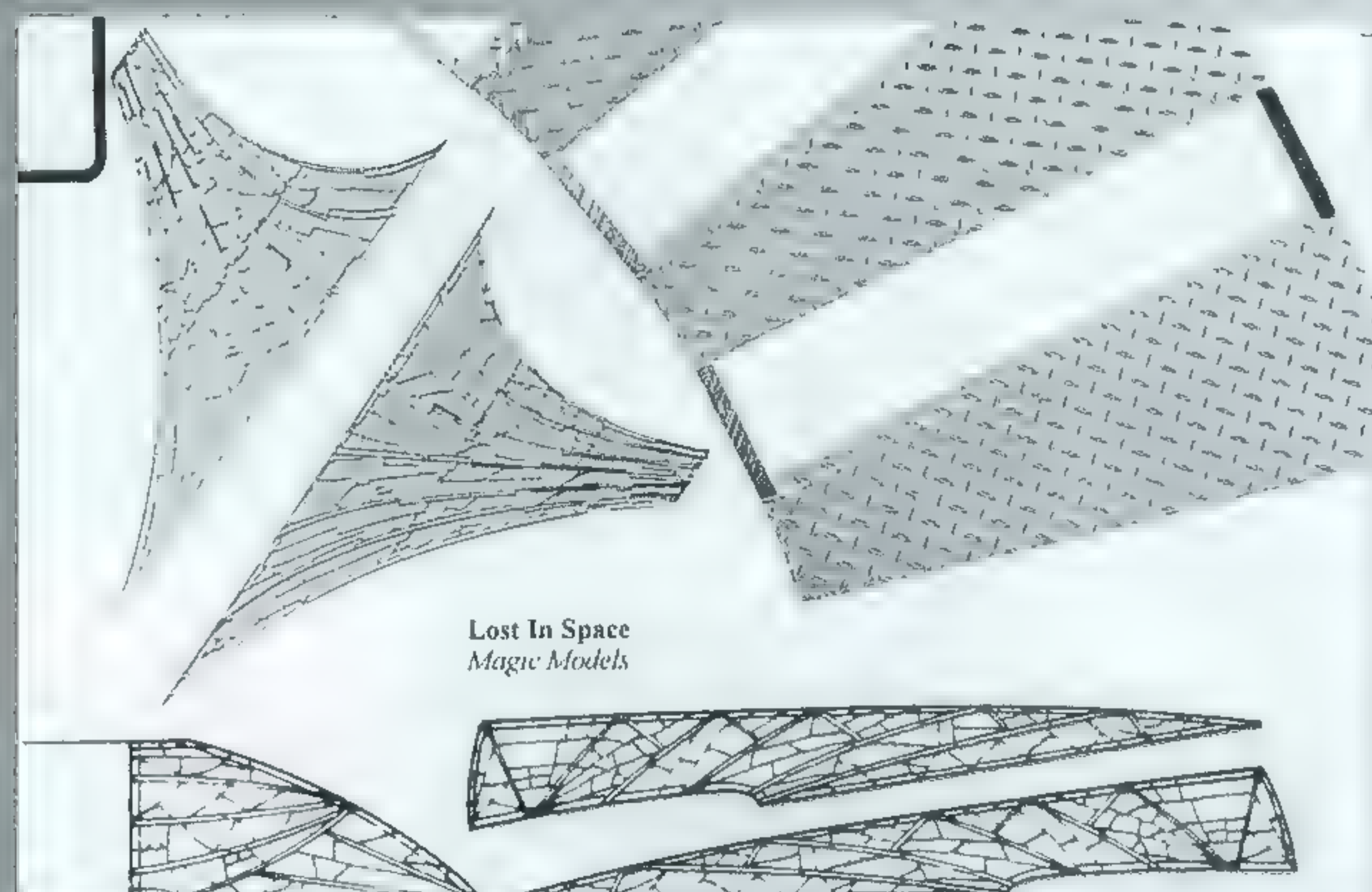
We produced the identity cards for Sean Connery and Catherine Zeta Jones to gain entry into the KL Tower in the film **Entrapment** and the elevations of **Big Ben**—which were blasted into oblivion by the aliens—in Tim Burton's **Mars Attacks**. The custom casting service was also called upon for all the white metal engine detail on the **Event Horizon** and **Lost in Space** movie ships.

On a slightly different tack, we produced numerous brass etched

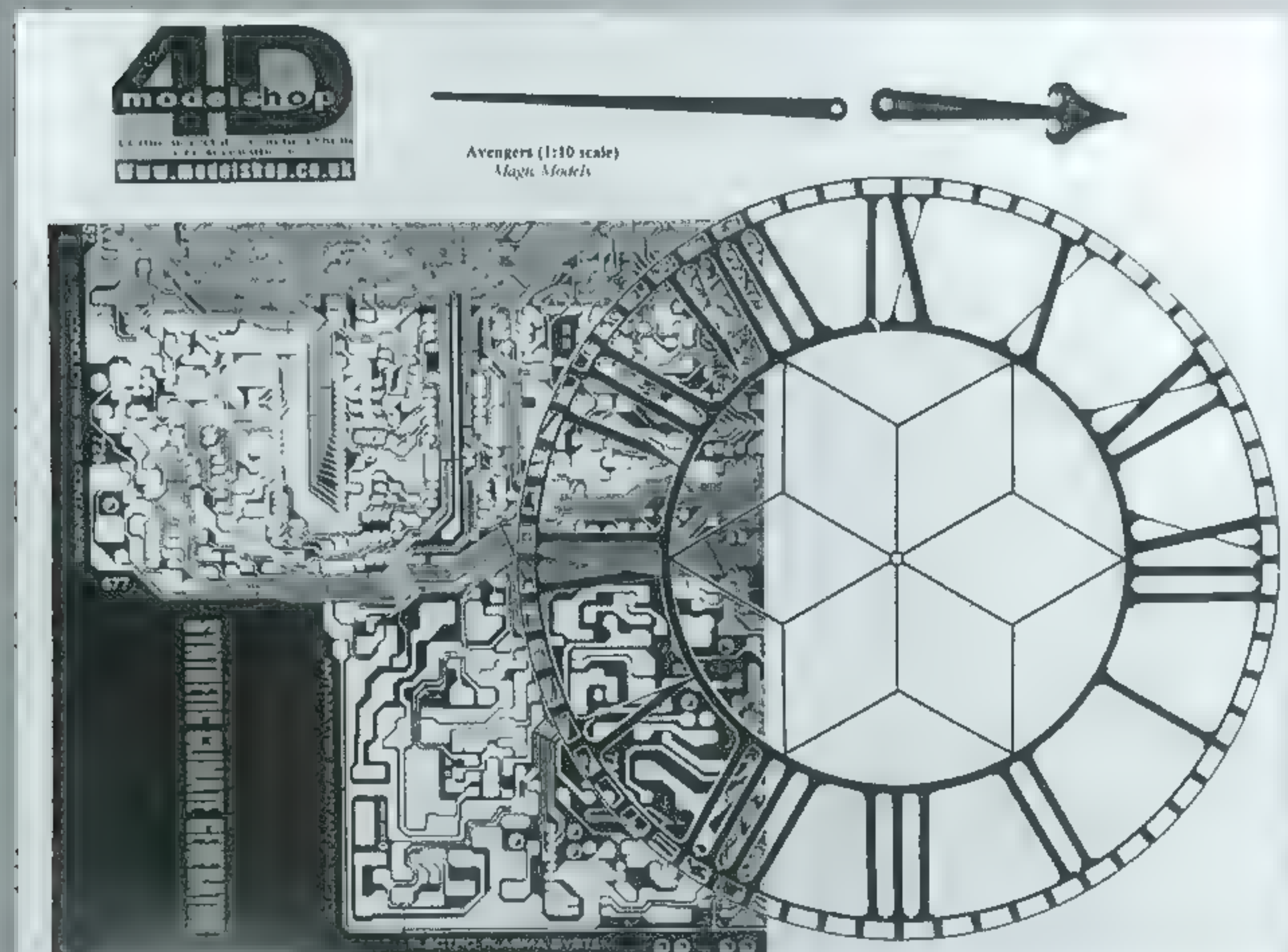




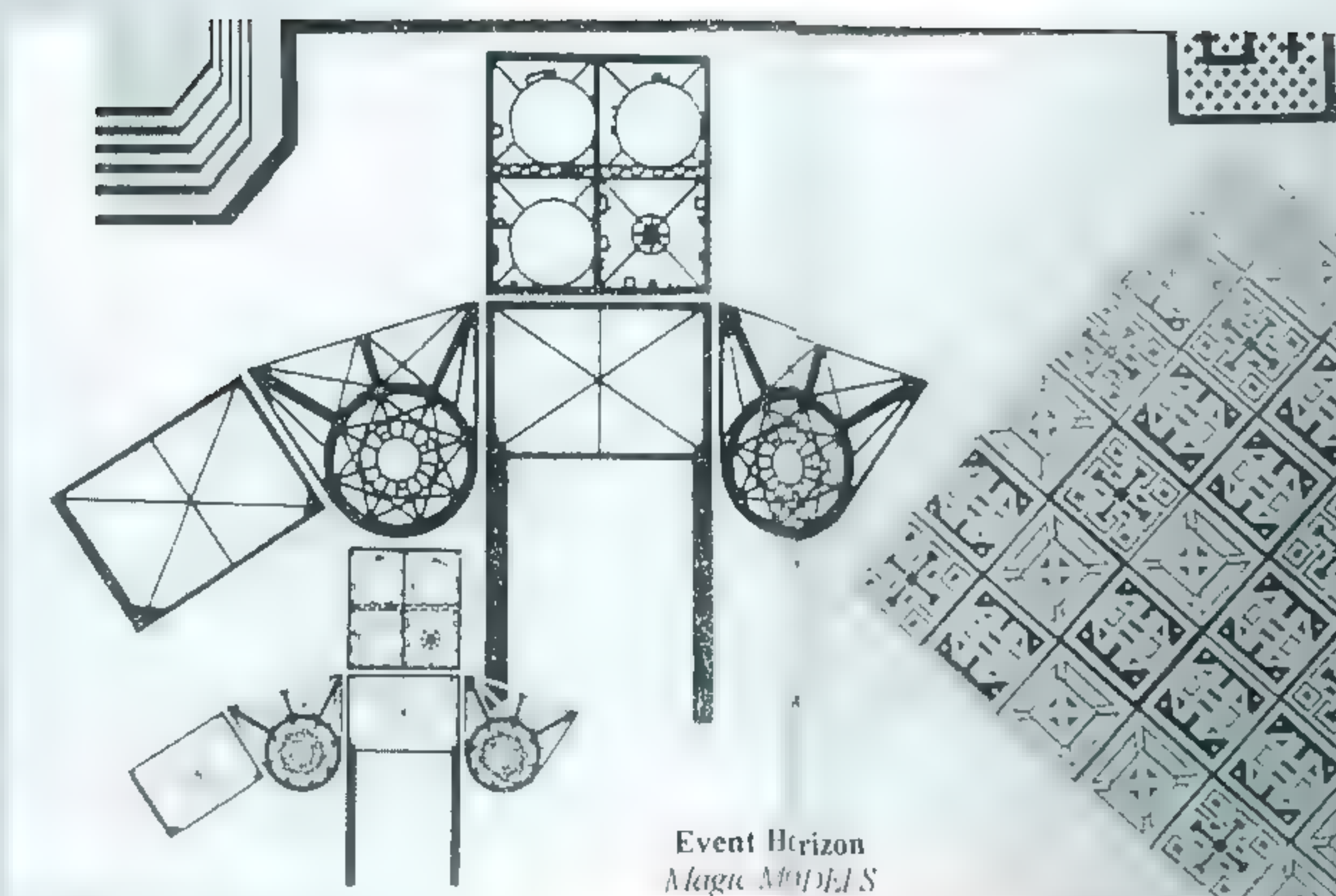
Entrapment identity cards; LIS circuitry; Phantom Menace name plates.



Delicate brasswork for Lost In Space.



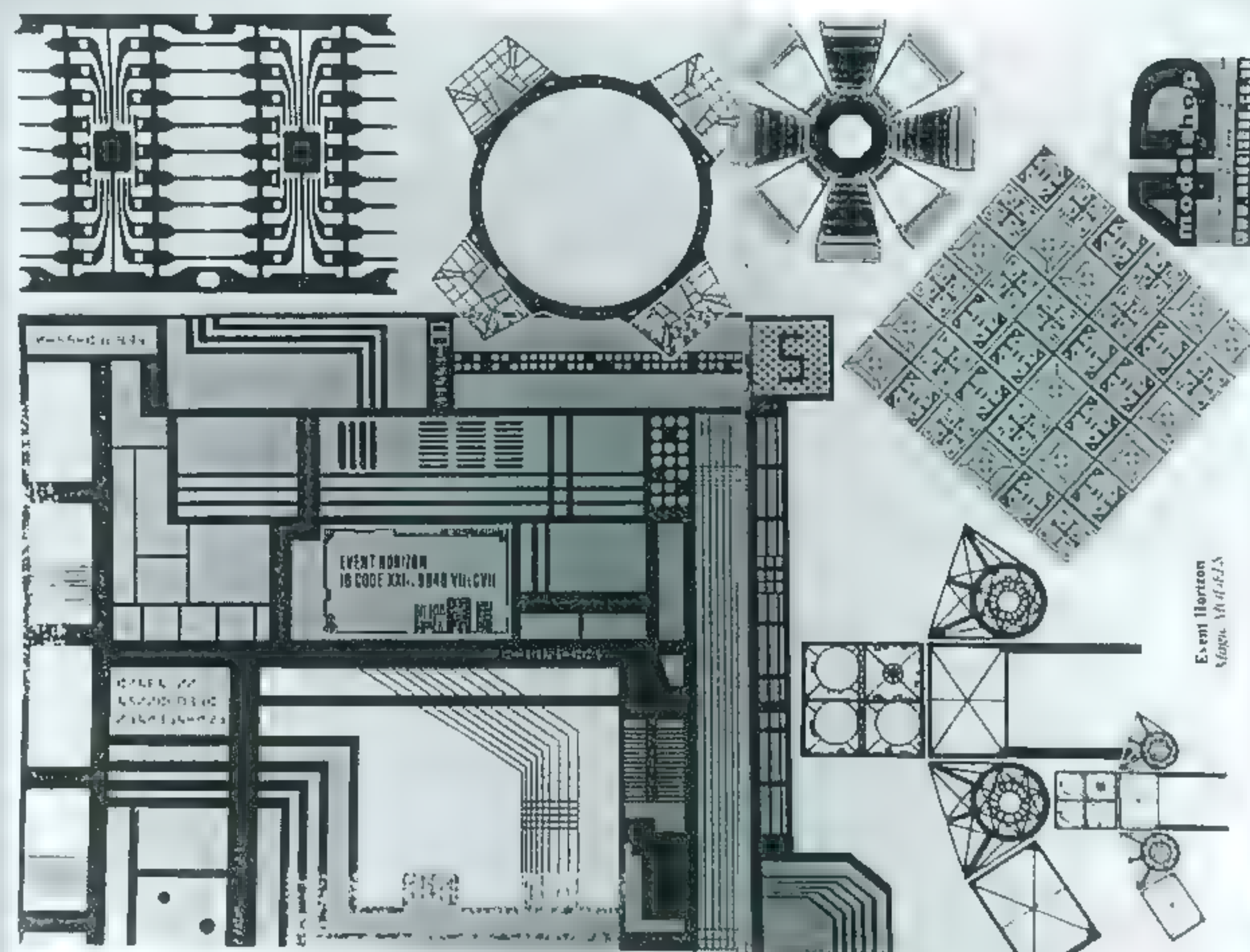
The Avengers movie clock face and circuit boards.



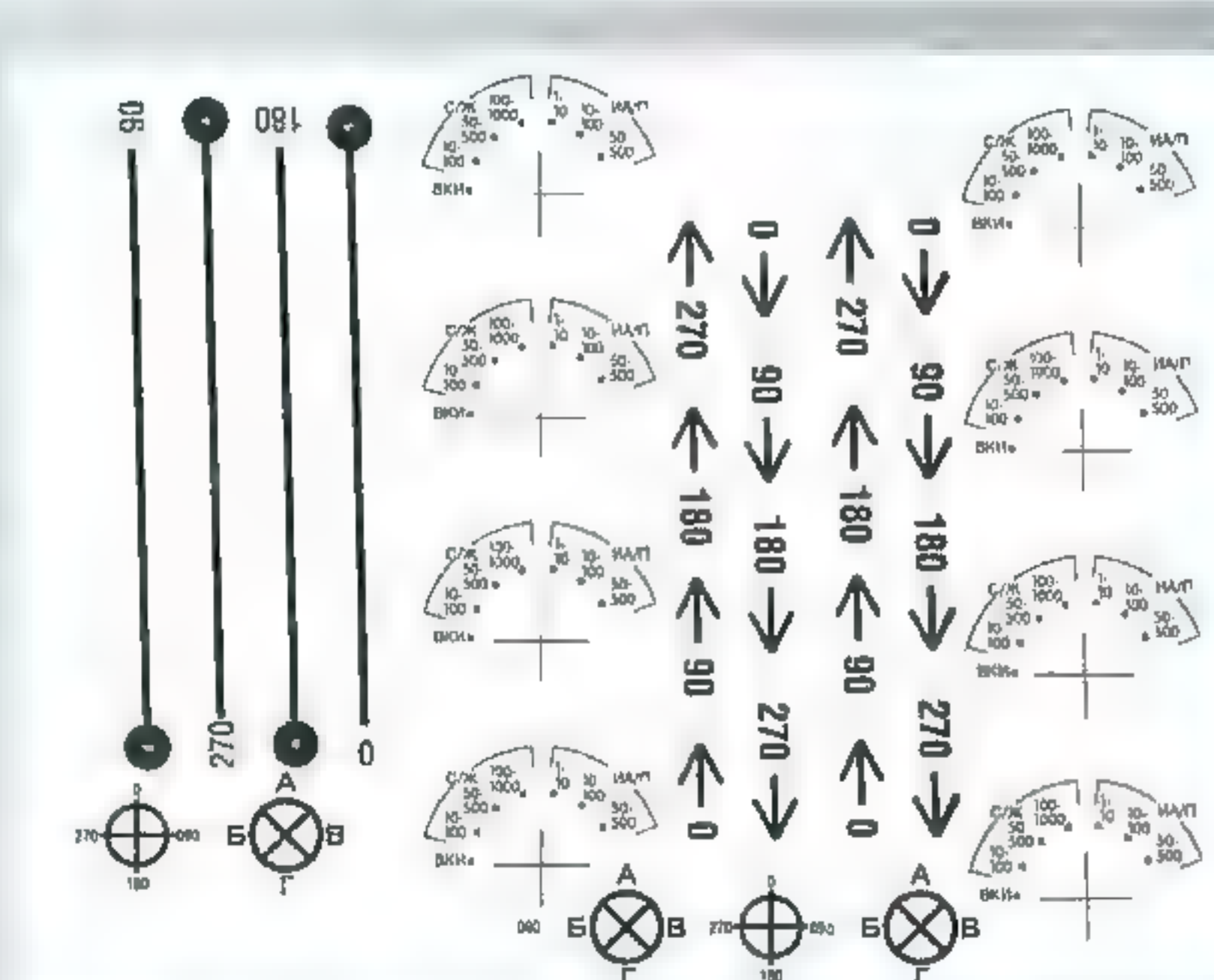
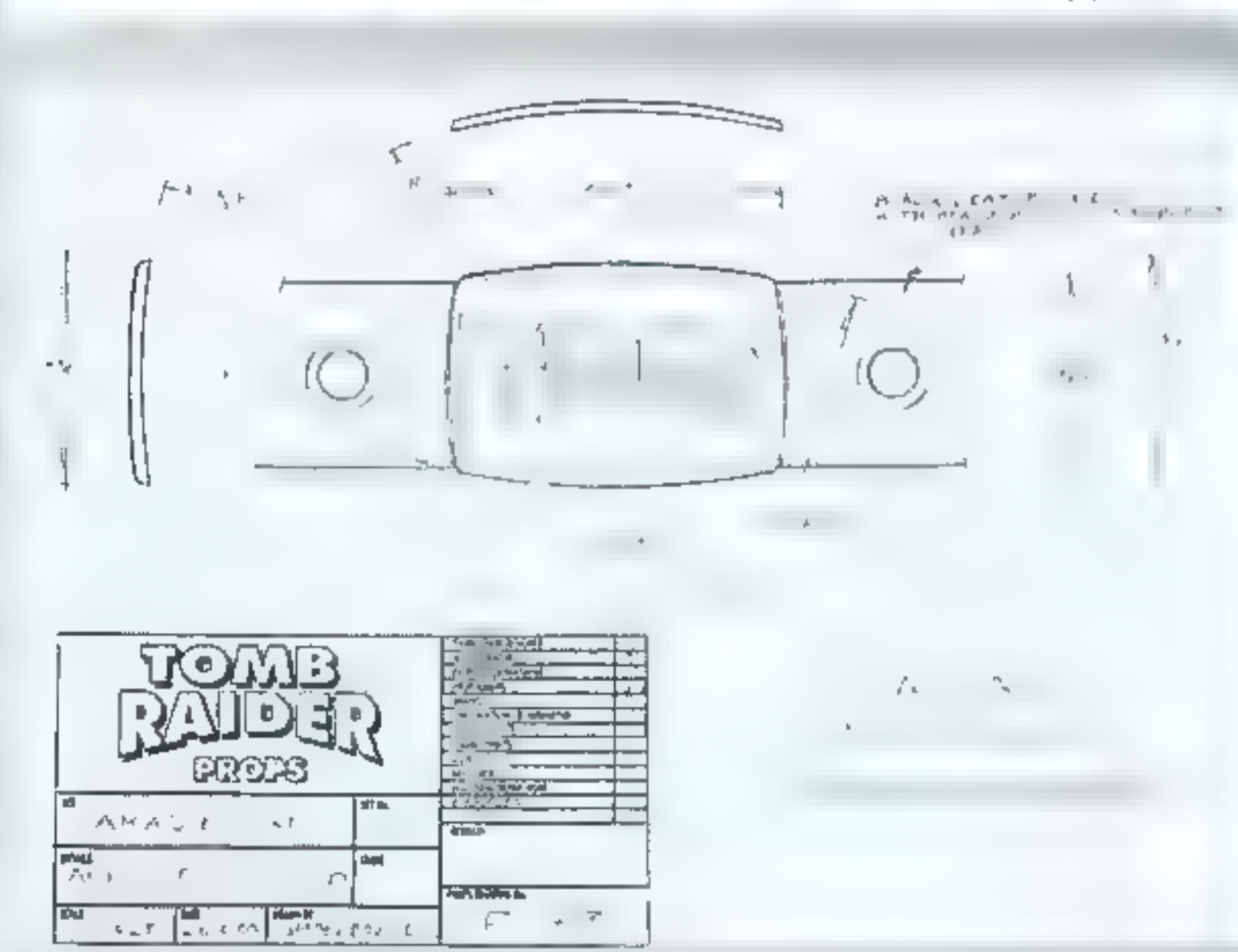
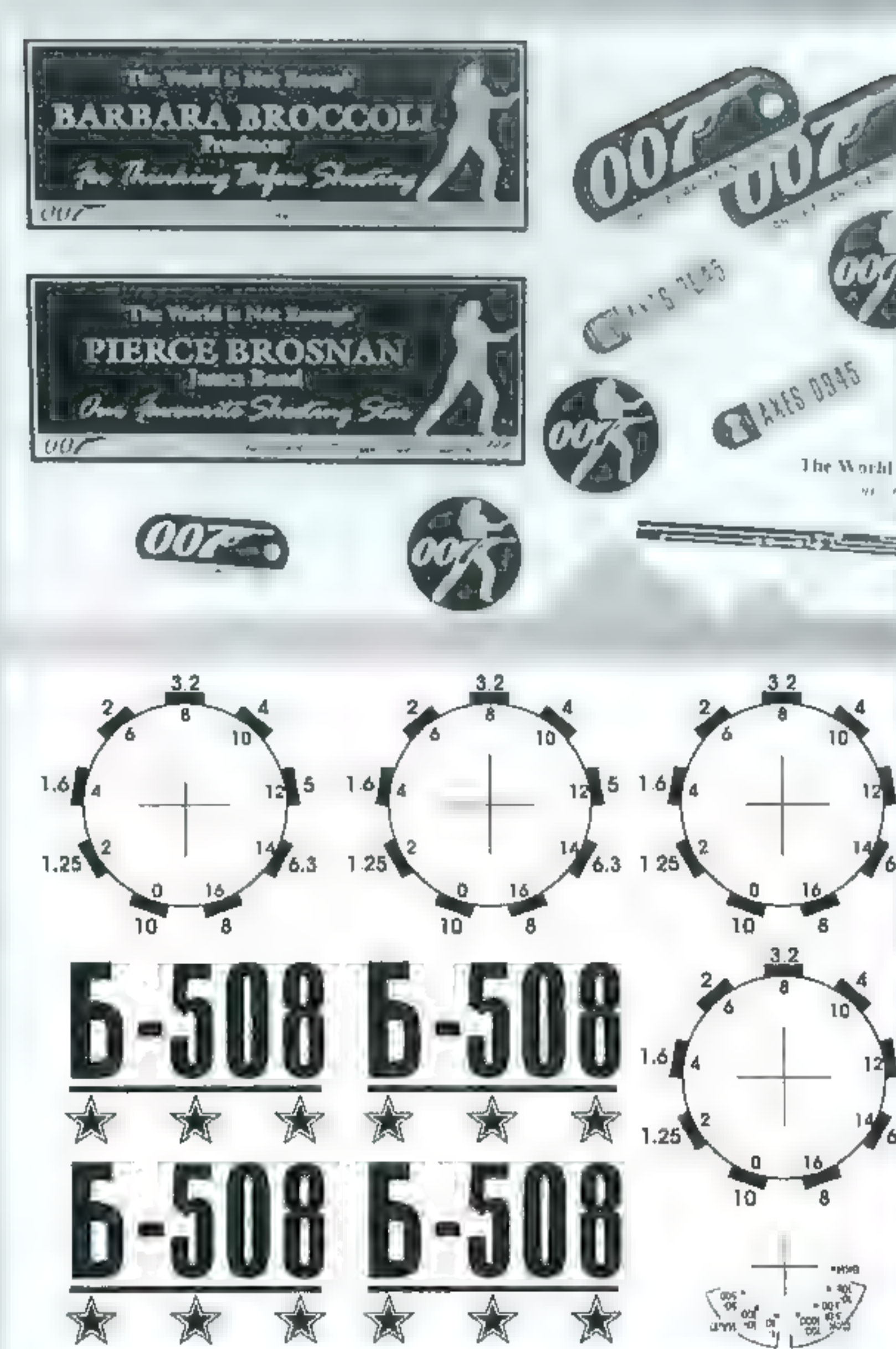
Event Horizon circuit boards.



Delicate brasswork for Lost In Space.



Event Horizon circuit boards.



This column: The World is not Enough presentation plaques; dry transfer detailing for Russian bombs for a Bond movie; artwork for Lara Croft belt buckle for upcoming Tomb Raider movie. Right: Bond bullet holes in dry transfer format.

nameplates for *Star Wars* merchandising, following the release of *Phantom Menace*, and presentation pieces made for an end-of-Bond-film in house awards ceremony given by the art department.

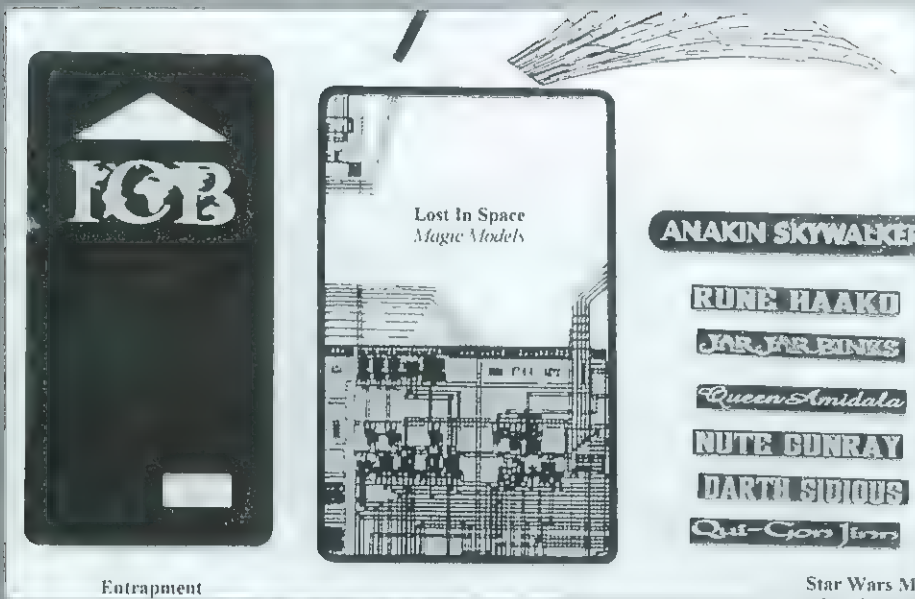
Away from the film industry, 4D's clients also include leading names in architecture; having worked on Richard Rogers' *Dome* and Norman Fosters' *Reichstag*, for which we supplied cars, trees, figures and etchings. Our museum work includes the new *Holocaust Gallery* at London's *Imperial War Museum*, where over 4,000 figures were produced for the Auschwitz model. Whilst in the Art World, we cast over 15,000 white metal pills for a Damien Hirst piece. We also have our own masters from which we can create a range of vehicles, street furniture and figures at all architectural scales; as well as producing the range in N gauge for the model railway enthusiast.

I think that covers most of our work—including a sneak preview of an original design drawing of the brass belt buckle soon to worn 'in the flesh' on the big screen by *Tomb Raider's* Lara Croft. Also on the cards, is more brass etching work for the up and coming *Mummy 2* movie.

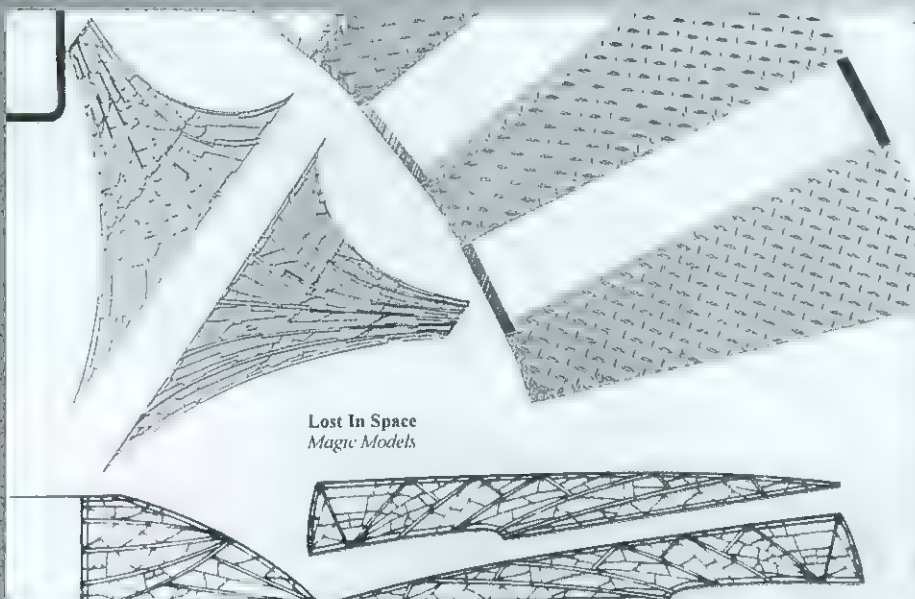
Why don't you come and see our range at: 4D ModelShop, 151 City Road, London, EC1V 1JH. (near Old Street tube station).

For further information on all 4D products and services, look up HYPERLINK <http://www.modelshop.co.uk> www.modelshop.co.uk, or contact us direct on: Shop: 020 7253 1996. Workshop: 020 7251 6544

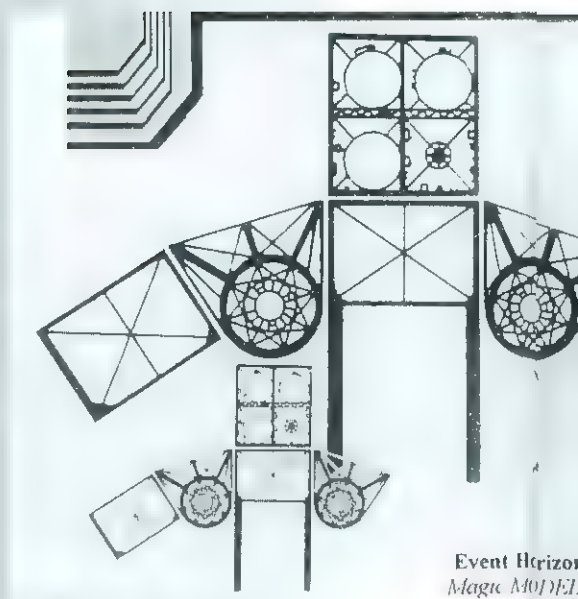




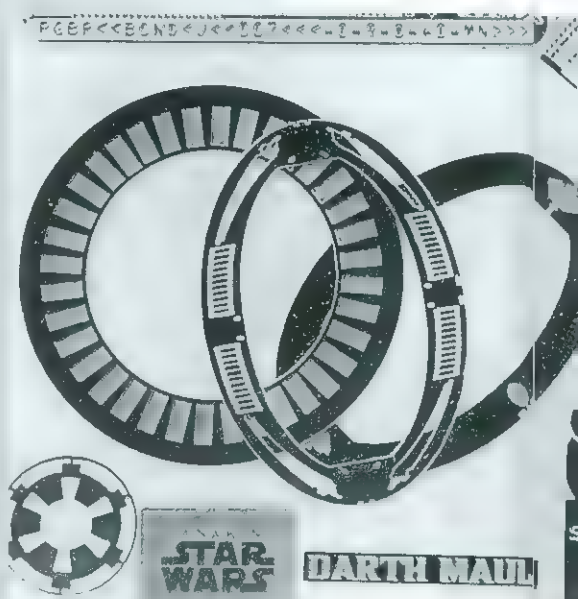
Entrapment identity cards; LIS circuitry; Phantom Menace name plates.



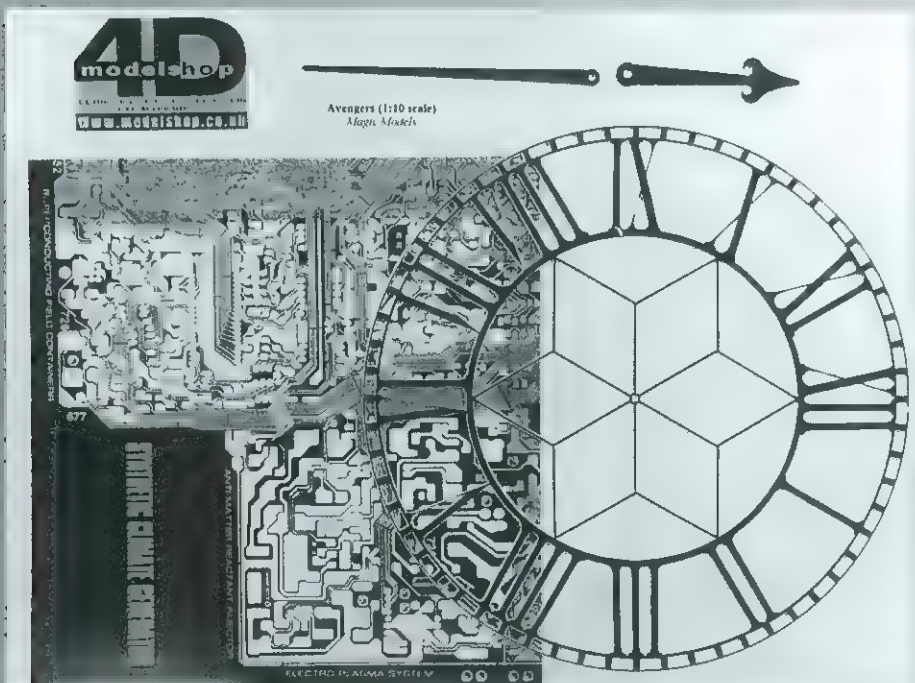
Delicate brasswork for Lost In Space.



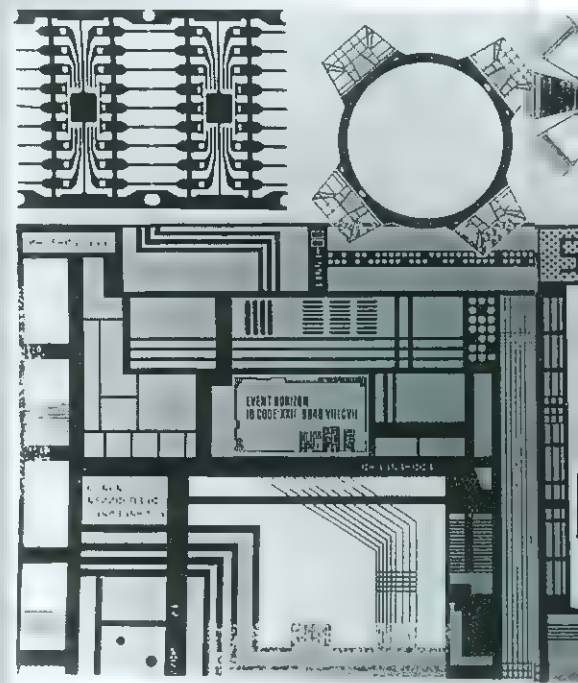
Event Horizon circuit boards.



Delicate brasswork for Lost In Space.



The Avengers movie clock face and circuit boards.



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This column:
The World is not Enough presentation plaques;
 dry transfer detailing for Russian bombs for a *Bond*
 movie; artwork for *Lara Croft* belt buckle for
 upcoming *Tomb Raider* movie.
 Right: *Bond* bullet holes in dry transfer format

Continued from page 3...

GT: Was the miniature set a safe approximation of Colorado or an accurate representation? If it was the latter, did you refer to photographs for accuracy?

R: The majority were generic structures, except for a dozen buildings which were accurately copied from actual Denver buildings. The buildings were based on a library of meticulous reference material known locally as a postcard. *We kid you not!*

GT: How many buildings were constructed?

R: There were 60 buildings in 1/60 scale and 40 at 1/35 scale; each building having two or more configurations. It was possible to get a completely different city many times over depending at which angle the miniatures were placed. There were also dozens of 1/35 scale crushable and an array of miniatures that are listed above. In all, there were an estimated two hundred models.

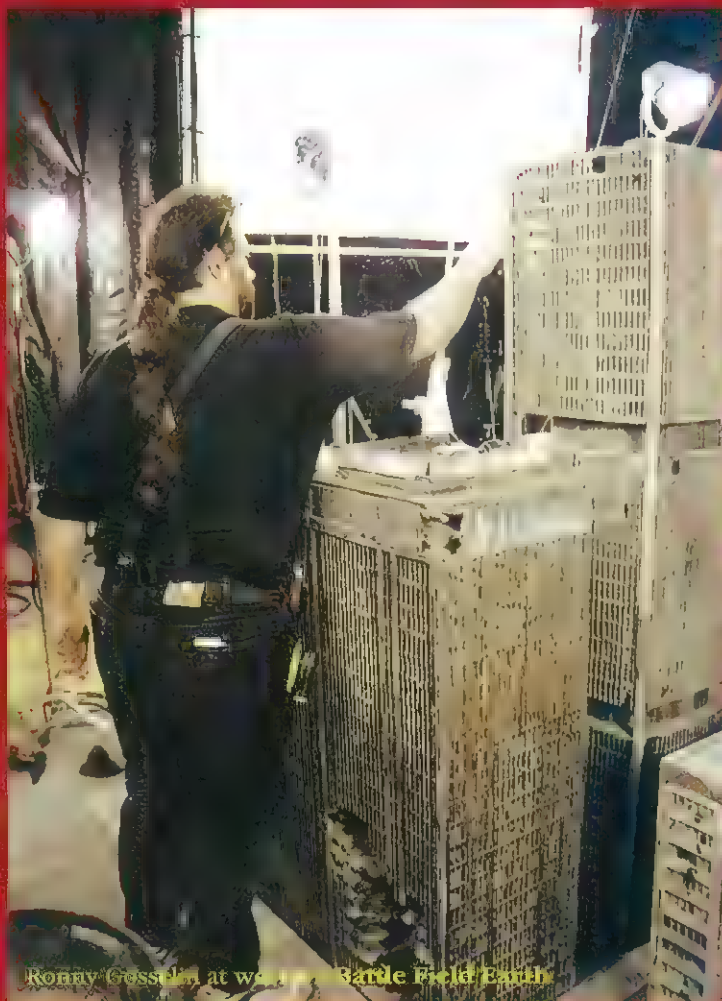
GT: How many model makers were involved in the construction of the miniature set?

R: On average, the crew was comprised of twenty model makers for the seven months that we worked on the film. After the decision was made to make another bigger scale city, the crew increased to sixty people at peaks. This amount includes the model makers supervised by Chris Trice (*Lost in Space*, *Red Dwarf*) for making the *Mark II*s.

GT: How big was the finished set?

R: There was an array of sizes and scales as follows: The 1/60 scale city set covered, when fully assembled, an area of 50 feet x 50 feet. The 1/35 scale street was 50 feet x 75 feet; it was disassembled and reassembled for the other side of the street.

All the sets used a mix of scales. The 1/6 scale set used 1/6 as the foreground and [a] 1/60 scale background. The 1/35 scale street used a 1/12 foreground and 1/60 scale city used 1/24 as its



Ronny Gosselin at work on Battle Field Earth.



foreground scale. The 1/4 scale smokestack was 24 feet tall and 3 feet in diameter. This also included the section of brick building supporting it. Most of the crushable buildings were 15 to 20 feet tall.

GT: Did you experiment with different materials for the breakaway buildings employed in the destruction of Colorado, noting the results, or are breakaway materials and their resultant effects a

grounded science within miniature effects?

R: An extensive R&D went forward and the best results were obtained with a 50/50 mix of plaster of Paris and Basecoat plaster. The plaster of Paris is the usual and fast way of doing it but adding Basecoat plaster was [a way of] making the panels more brittle and powdery.

GT: How was the destruction realised and can you describe the rig employed?

R: Visual effects supervisor, Eric Henry (*The X-Files*, *Alien Resurrection*) came up with the idea of dropping boxes (painted in digital green) to crush down the buildings. Then the box or boxes would be replaced with a CG alien structure. Our task was to weaken the building once it was assembled. This was accomplished with a cutting disc. We had to make sure that no big section would survive. After some tests, Bill suggested a latticework of Kevlar wires running horizontally through the building. This was to make sure that the building would collapse inward and down, level by level, leaving no piece intact.

GT: When the scene was shot, at how many FPS (frames per second) were the cameras set?

R: Eric Henry, Steve Dellerson (visual effects producer) (*Gataca*, *Space*

Jam, *Blade*) and Rick Fleher (*Star Wars*, *Indiana Jones*, and a million other cool ones) decided to start with a *Photosonic* camera running at 300 FPS. After some trials, they finally decided upon 240 FPS.

GT: Did the shoot employ several cameras/angles?

R: Some of the shots only needed one camera because the angles had to match specific shots already shot by the first unit.

GT: Did you employ any pyrotechnic effects?

R: Some buildings had the advantage of being fitted with explosives, designed, fitted and fired by pyrotechnician Joseph Viscosi (*Star Wars*, *ID4*, *True Lies*, *Terminator*, *Flesh Gordon*).

GT: Was this a one-take/no mistakes affair?

R: Obviously all the plaster buildings were non-existent after the squish, so this was definitely a one take/no mistake affair. The advantage of the plaster buildings was that we could make a fifteen foot tall building in two days. I had a day and night crew just for casting the panels and a day crew for assembling them. All were led by Patrice Jacques.

Another thing that had to be a one take/no mistake affair was the *Psycho* bridge. The bridge took two good model makers two weeks to produce. Needless to say, we pampered it before and during the shooting. As for the smokestack, I designed it with only one section that would break and crumble. The rest of it was left strong so that we could use it again. When shooting the smokestack would fall onto mats and boxes to protect it from the next shot.

Thank God it was reusable, because the first shot was a total failure. Thankfully, the second take was a total success.

GT: What's on the horizon now that **Battlefield Earth** has wrapped?

R: In Montreal, things in the industry cool down during the winter. However, I have a few interesting projects brewing.

GT: Many thanks for taking time out for us Ronny.

Geoff Topping
© 1999/2000

All photographs © 1999/2000
Ronny Gosselin & Patrice Jacques.



The style for the *Psycho*'s grinds was developed by Bill Pearson.



The Ron wall—the bridge

Montreal, Mk IIs and mayhem in miniature—

An interview with Chris Trice

geoff topping

Model maker Chris Trice will be familiar to readers of this magazine as a member of Bill Pearson's team on Red Dwarf series VIII. Last year, Chris found himself once again working under Bill, supervising construction of the miniatures on John Travolta's *Battlefield Earth* in Montreal. I asked him to retrospect his work on the production.

SFFX: Chris, how did you become involved on *Battlefield Earth*?

CT: I'd heard that Bill was being head hunted by Roger (Christian)—the director—to supervise putting a model crew together in Montreal. They've worked together many times and Roger was, at that time, the only Brit on the production and I think he liked the idea of having someone there who knew what he was likely to want.

Bill agreed and flew over to Canada to start pre-production. It was some weeks after that I got a call from Bill saying they needed someone with mechanical experience to supervise the motion control models so, after talking it through with everyone concerned, I agreed and flew out to join Bill at the start of May '99.

SFFX: How did you fare with working in Montreal?

CT: We certainly faced some big challenges but on the whole it went quite well once we had the wheels in motion. The production had arranged somewhere to stay, which was very nice, so there were no domestic worries and we could concentrate on getting the job done. The local Canadian crew was very friendly and made us feel welcome straight away. From our point of view we had the problem of not having any local knowledge in respect of materials suppliers and a surprisingly big difference in the nature of the materials compared with the UK.

For instance, we started with plastic solvent that was still wet two days later, the superglue accelerator

melted plastic and the superglue itself seemed reluctant to ... well—stick. This may have been down to the brands that we were using as obviously Canada is quite capable of making good materials but it was frustrating to begin with until we found the right suppliers.

The other problem was lack of

Ronny (Gosselin), the Modelshop Supervisor, very thoughtfully gave me a list of model suppliers in the Montreal area which I used to investigate at weekends.

SFFX: What were your main responsibilities on the production?

CT: My brief was basically the spacecraft models and anything else that was motion controlled. Bill had also mentioned perhaps doing some of the landscapes and weathering the buildings but other than offering a few time saving pointers, that side of things was handled by Ronny and his team.



SFFX: One of the most prominent designs in the film that you produced as miniatures were the *Mk II Psychlo* ships. How did you approach them?

CT: We needed two; one was 1/24th scale, about two and a half feet long and fully poseable and a larger, 1/12th, five-foot beast that was fully motion controlled. The *Mk II* was a very complicated model because of all the movements. The head rises up and down, the tail rises up and down, the canards/forelegs on the nose raise up and down

and some winglets at the root of the tail raise up and down. The engines rotate *Harrier* style around an axis through the centre of the body and the rear legs/wings swing forward and rise in a birdwing motion.

In addition there was lighting in the engines to simulate an engine glow and two lighting circuits for nav lights—oh, and interior lights in the cockpit. This all had to be packed into the tubular body, which was about seven inches in diameter and about ten inches long. In addition we had to fit a fan to keep the thing cool inside and disguise any access hatches into the design.

Furthermore it had to have four

money. In the early stages not all the financing had yet come through so we were forced to start building things with anything we could find by sweeping up under the workbenches. This is quite common in any (every) production but it does tend to tie your hands more than you'd like. It forces you to be creative, which ironically can make for a better result in some cases.

Either way, through sheer frustration Bill eventually went the more familiar route and shipped a load of materials from the UK in a big freight container, which kept us going until we could establish some more local connections. In addition

mounting points on the front, rear, top and bottom. The original brief was for mounts on the side too but, due to all the movements needed, it was physically impossible. I was going to bed at night and when I closed my eyes all I could see were these wheels and cogs and universal joints and bearings and threaded rods drifting through my imagination.

The first thing I built was the body and tail of the smaller *Mk II* to act as a design study for the bigger motion control model and get a purchase on where the problems were likely to be. There were a few practical impossibilities in making the model function as the ship was first envisaged. This led to a few tweaks after discussing the problems with Patrick Tatopoulos and his designer/draughtsman Lev.

Patrick is very realistic when it comes to turning some of his designs into reality and we would freely bounce some ideas about before making a decision. Patrick is not 'precious' about his designs which helped in making the path to an already complicated spaceship all the easier. I wish some other art directors were more like him.

Now with a few ideas for how to tackle the body of the big ship I handed the small one over to the model crew to make the rest of the bits and duplicate what I had done for the larger one. At the same time a full-size one was being built on the stage next door using the same drawings we were using so it was important we stuck to the plans. I built the main body of the large model and incorporated as much of the mechanics into it as I could cram.

Progress was severely hindered by the lack of facilities. We were essentially in a large hangar of an old military base with very little in the way of machine tools. It was obvious from the outset that I was going to need a lathe to machine up the ship components. I remember trying to explain to a number of wretched souls why this was the case and eventually, after three months, the production reluctantly agreed to buy a cheap, nasty Chinese lathe that Bill and I had stumbled upon by chance during an expedition into central Montreal.

I had taken a lot of my engineering hand tools with me and, naturally, with the French connection, I took

my metric taps and dies. Unfortunately Canada, like the US, is doing a superb job preserving the use of all the old imperial threads. Buying metric nuts and bolts was unbelievably difficult unless you bought them in large numbers. In all other respects we kept up to the schedule.

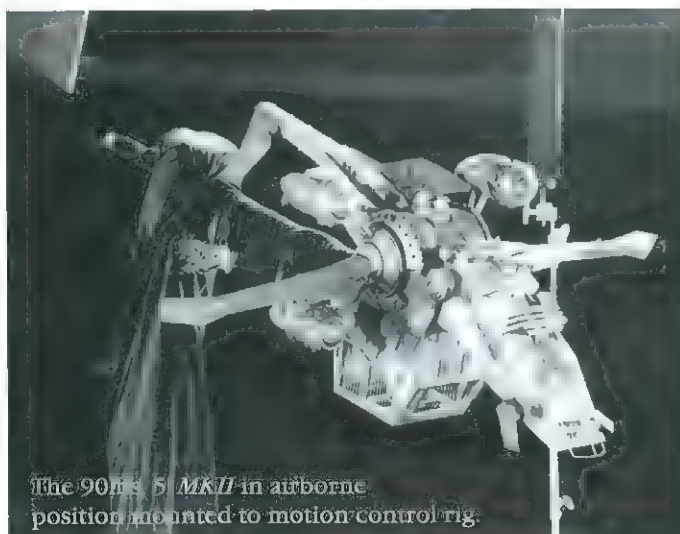
SFFX: What kind of materials did you employ in its construction?

CT: The small one was almost entirely plastic with a few parts in fibreglass for their toughness and ability to resist heat better. The cage bars were built from steel welding rod. All this was wrapped around a sturdy aluminium chassis frame that was threaded to take the various mounts and electrical connections to the motion control rig.

The bigger model was basically the same but with much more metalwork

added by engraving or by using a black fine tipped ball point if we were pushed for time. When both ship models were finally completed and painted we had to guess how the full size crew were going to weather the big one.

One of the real characters of the crew was a bubbly individual called Celine who was very talented at painting and weathering. She was obviously busting to have a go at weathering the spacecraft, so between the two of us we applied a filthy black wash using *Humbrol* Matt Black and paint thinners. The end result turned out to be an almost exact match for the full size prop. Wherever I could, I tried to let every member of the crew have a shot at doing something on the ship. They all worked very hard and it's testament to their enthusiasm that we pulled it off.



due to the various mechanics. It weighed 90 pounds when it was finished and mounted to the rig on three-inch diameter scaffolding tube. It took two people to lift it.

Steve Switaj, one of our two motion control operators (the other was Chris Dawson), had the unenviable task of programming a flight manual for the *Mk II*. It became transparently obvious that, without certain safeguards, various components of the ship were going to collide expensively together without some careful computer choreography as the ship transformed from landed position to in-flight position. Watching the ship on rushes is a thing of beauty as all these panels and limbs unfold balletically in front of your eyes. I tip my hat to Steve on that one.

The *Mk II* was painted with various shades of a light metallic blue car spray and panel lines and details were

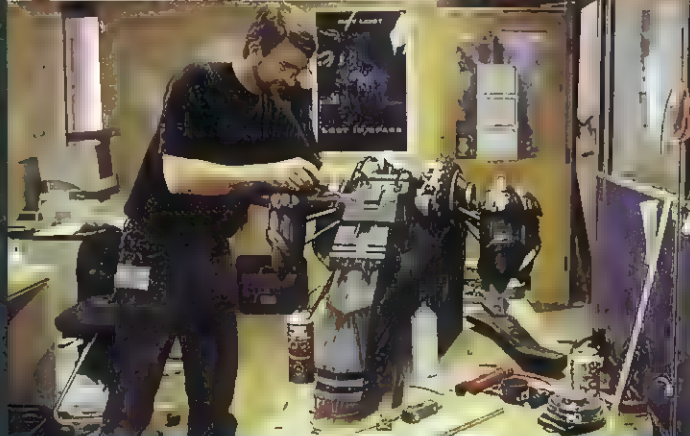
SFFX: What other miniatures were you involved with?

CT: I had a hand in most of them to lesser or greater degrees. As the workload increased and the model crew expanded, I was able to delegate jobs to various people who I knew. I could say, "This is what we need, bring it back when you've done it." I supervised the building of the exploding *Harriers* and the *Teletransportation Spheres* but the bulk of the work was done by the model crew who would only really refer to me if they had a problem.

Dave, Alain and Roget did the most work on the *Harriers* and, considering the limited resources, turned out some very nice 5ft models complete with weapons which Joe Viscosil was going to blow to pieces. I would perhaps indicate to them what they had to do and the way I'd approach their construction but they were quite capable of producing the goods.

Bill would make overall decisions as to how or if we should build stuff but he was very busy sorting out the guns and dealing with other props and seemed happy for me to organise the rest. He also took most of the meetings with Roger and Eric Henry the FX Supervisor and chasing around after all the loose ends that needed fixing and that swallowed a huge amount of his time. It was a good system that seemed to work very well.

The model crew were split roughly



into two halves. One half dealt with the long and tedious business of turning out hundreds of ruined Earth buildings. This was Ronny's responsibility and under his supervision the team turned out some wonderful miniatures. At one stage there's a chase between the alien ships and some earth *Harriers* down the streets of the ruined city. This meant setting up a fifty-foot length of cityscape in front of the motion control rig and greening up all the buildings where the forest has encroached back into the city. This was done to emphasise that this city was one of the cities outside the *Dome*.

I showed the crew a quick and cheap way of adding vines and greenery to buildings by teasing out wire wool very thinly, spraying it brown and then sticking green granulated sponge to it. We had a couple of hilarious days where everyone including myself let off some steam, making blankets of this "pond weed" and building miniature trees. It's a shame that the set ended up being re-shot at a larger scale without greenery.

For the first two thirds of the production I was almost exclusively wedded to getting the ships built but

after they were completed the roles reversed and I found myself dealing with whatever mechanical problem needed doing since construction on most other things had already started. I was also slowly phasing in Rob and Luc to handle anything involving the ship as they were going to inherit responsibility for it during the last few weeks after I'd returned to the UK.

SFFX: You also worked on the *Psychlo* gantries. Could you explain how they were approached?

CT: These were the first things I built when I originally arrived in Montreal during the "We have no money" stage. The art department had produced a drawing, which I loved, so I did my best to stay true to the illustration. The gantries form part of the mining complex where slaves are used to dig for gold.

Due to the lack of materials I roughed out the towers with foam laminated card and later covered them in styrene sheet. The panel lines were then all engraved with an engraving tool and the cracks in the masonry were made with a tiny ball cutter in a *Dremel* motor tool allowed to skip across the surface of the plastic in the rough direction I

wanted the crack to travel. The framework was made from strips of wood salvaged from a previous job and all the little reinforcing gussets were cut from cardboard.

I remember thinking at the time "Am I really working on a multi-million dollar Travolta movie?"

At this stage the towers were shelved and left to be painted at a later stage. Subsequently some rigid welding wire rails were added between the gantries to take two mining cars that pass each other care of a motion control motor.

Roget, Alain, Luc and Robert built this assembly while I was mounting the entire set on a landscape I carved from polyurethane foam. More of the crew had had some fun designing and building some refinery towers to act as a background and I think everyone who was in the modelshop had something in that shot.

SFFX: Did you produce everything to set designs, or were you able to put any personal input into any of the miniatures?

CT: I like to follow what the art department produces, because I know how much it's appreciated by the person who drew it originally. It's great to be given the freedom to



design stuff but all the models I was charged with had had their design finalised. Other than the changes to the ship for practical reasons, which I obviously had a say in, most of the stuff was designed. Bill had far more

input into the design of the props, as so little of them had been worked out in advance or needed changing as things evolved.

I would frequently consult with Steve Dellerson the FX producer or Eric as to which model they were going to require next as that would often dictate if we had to alter the designs subtly in order speed up construction. It was not unknown for Eric to come in ten minutes before we went home at the end of a very long day and proclaim that he absolutely had to have a certain model constructed ready for the following morning. We often joked how nice it would be if the magic model fairy would leave what was needed in the workshop overnight but unfortunately we had to burn the midnight oil instead.

SFFX: What projects are you working on at the moment?

CT: I've been working on the trailer for a proposed film and TV series called **CABS**. It's very Andersonesque, using traditional models flown or pulled on wires and animatronic puppets. It's a futuristic science fiction series. All the vehicles have been designed by a personal hero, Mike Trim.

Mike designed almost all the vehicles that the late, great Derek Meddings didn't, in all the Anderson shows from **Thunderbirds** onwards. His style is very similar to Derek's and I've spent seven weeks building the models with Mike at Bray Studios and it's been absolute bliss. Mike and I think along the same lines as to what



we think looks good and that's proved very rewarding in itself.

There's not a CG shot in sight and I think the audience is in for a real treat. It's the kind of stuff that made me want to become a film model builder in the first place..

SFFX: Thank you, Chris. We hope to see more of your work in the not too distant future.

Opposite page: full size *Mk II* on location; mining complex miniature; Chris Trice at work on a *Mk II*; chief modelmaker Patrice Jacques.

This page: filming the destruction of the 1/4 scale smoke stack; Rich Fichter (Model D. P.) checks lighting on one of the buildings scheduled for demolition.

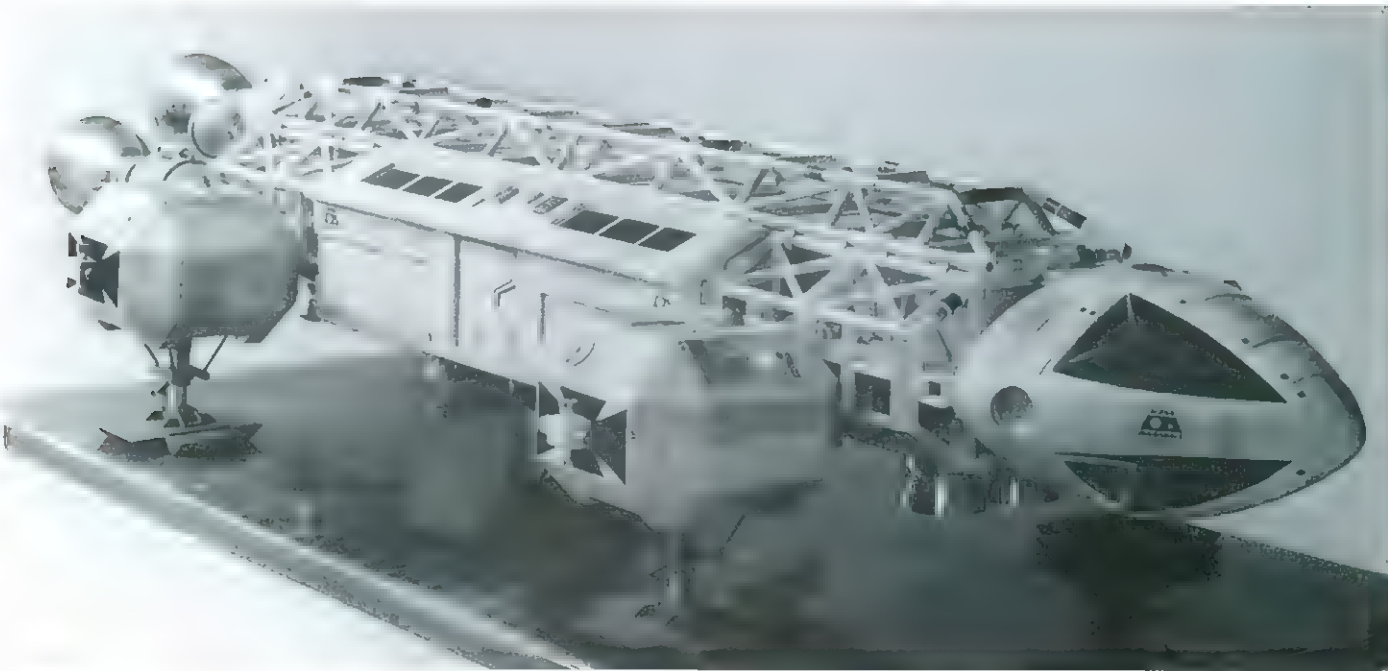


Back row: Rob Lalonde, E. James Small, Dave Lovejoy, Chris Trice, Alain Drufesne
Front row: Celine Turcotte, Luc Roy, Roger Bourgoignie

Continued from page 17...

Giant! — Part Seven: Closure

simon roykirk



Considering the numerous and varied time-consuming operations demanded by this kit over the past eight months in order to bring A-B's 44" Eagle to a point where it was now in almost-completed modular form, the final stages of assembly of this mammoth model took a surprisingly short time to instigate.

With the spine completed and the walkways, fuel tanks and engine bells all firmly in place it was time to attach the beak. This was simply a matter of lining up the four 'clamps' on the back of the command module section with the four brackets on the front cage that had been drilled out previously, inserting the tiny bolts provided (after first snipping them down to the correct length) and securing these with washers and nuts. With the beak in position I selectively and lightly airbrushed the spine, cages and fuel tanks with a 50% water/50% paint (approx) mixture of light matt grey. I then repeated the operation with a 50/50 black mix, holding a card against areas of the *Eagle* I wished to remain white and spraying against this to give a random panelled effect to craft's 'backbone'. Although the *Eagle* gives the impression it is mostly a pristine white craft on screen I can assure you, having had access to an original 44" studio miniature, that the models *were* panelled and dirtied down

considerably—it is the cleaning up effect of colour film that renders them almost totally white in series footage. My weathering was kept subtle, however—just enough to give the *Eagle*'s body a grittier, more realistic look.

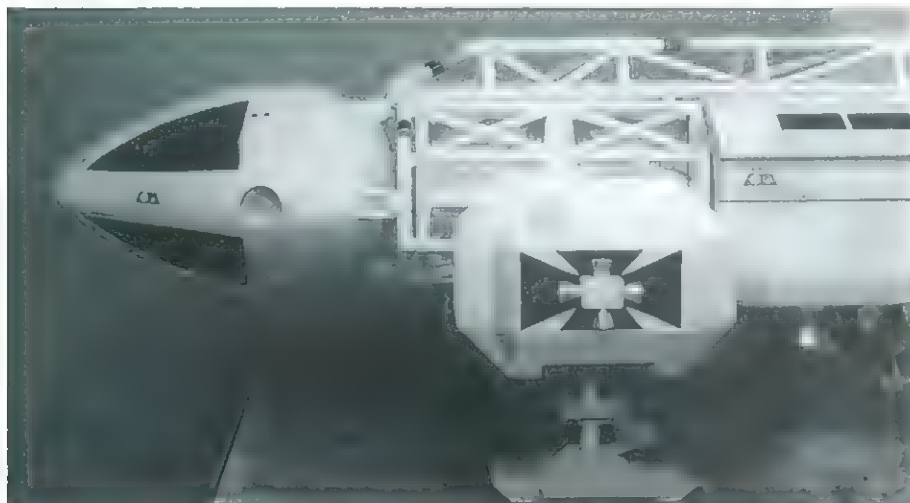
The orange rectangles featured on the rear fuel tanks were cut from adhesive car pinstriping tape and stuck in position. Red, orange, silver and black tapes were also used to create the bands of colour seen on the spine's framework. Note: do NOT use coloured electrical tape for this purpose—it shrinks and will eventually pull away from whatever you stick it to.

At this point I took each of the four leg pods and attempted to slot them into their respective holes through the *Eagle*'s cage sides. The resin lugs on each pod that slide through the cages and into the walkways via the L-shaped runners glued in position at an earlier stage needed considerable sanding and filing

down before they would ease into place. Don't take too much resin off here—repeatedly test-fit each pod through the relevant side of the *Eagle* until a tight, sliding fit with the main body via the lug is achieved.

Once each pod had been prepared in this way it was removed from the body and the aluminium attitude jets were added to it. Pieces of metal needed to be snipped from the bases of these before they would fit properly, and the holes drilled earlier in the blocks that hold the jets against the sides of the leg pods had to be slightly enlarged by hand-twisting a drill bit in each of them before the pieces could be coaxed into position. The resulting fit was so tight I could simply push-fit the jets into the holes—there was no need for glue.

Examining various photographs of the studio miniatures I discovered that each leg pod features a random pattern of quite distinct grey panels on most faces, these obviously having been produced by first masking off sections on each pod then spraying with (I would guess) matt grey car primer. I therefore painstakingly masked off each pod and sprayed the unmasked areas from a distance with primer. Subsequently, having stripped off the masking tape, I thought I had



overdone things and that the grey panels were too conspicuous a contrast. However I was, at this point, looking at the pods whilst they were still separate items. Once in place against the body the contrast panelling looked just right.

Final assembly

The moment had arrived—it was time to put the few remaining pieces together. This is more difficult than it sounds if you are working alone as, in almost-assembled form, the *Eagle* is one unwieldy and *very* heavy kit. Once *completely* assembled you are not going to relocate this model without help! My first task was, therefore, to decide exactly *where* I wanted to display the *Eagle* as, once in position, it would have to stay there! My second task to scout the 'second hand' shops in the village where I live for a suitable base on which to display the *Eagle*. I didn't want it to sit on the floor where it would inevitably get damaged and, due to its width (some 19 inches across), it was too big to sit happily on a standard shelf. I therefore found an old brass-legged coffee table (£15.00) and asked the guy in the shop to measure it for me. Lugging this home (it wouldn't fit in the car) I rested the spine assembly on top of it and slid a number of video cassette boxes under each cage until I'd elevated the *Eagle* sufficiently to slide the pod into position. I next supported the passenger pod on a stack of video cassette boxes until the top of it it was almost level with the underside of the spine (remember, this is a heavy, ungainly piece too!). Taking the two pre-drilled metal rectangles supplied (which I'd previously sprayed with white car primer) and the two screws provided I then gently positioned the pod and locked it in position.

All that now remained was to slide in the leg pods and carefully remove the video boxes, leaving the *Eagle* supported on its legs. I have to admit I didn't think the pods would support the weight of the body, but they did and—magically—the *Eagle* was complete. Well, not quite. I still had to go over the leg pods with a ball point pen and ruler adding panel lines; paint the red stripes on the rear fuel lines with red acrylic and a fine paint brush and apply random small detailing from the *Letraset* spares box all over the *Eagle*—but there she was—virtually *finished*!

Final thoughts

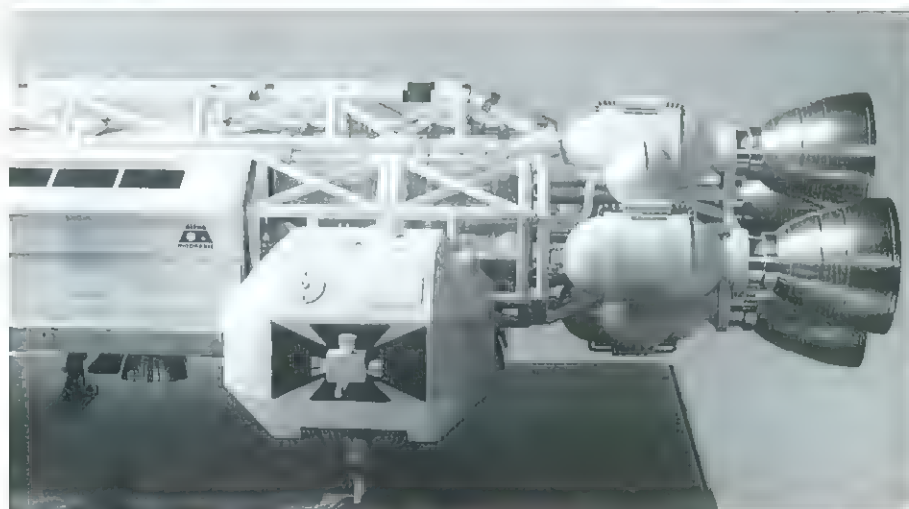
I feel as if I've just run a marathon barefoot carrying a heavy rucksack filled with rocks. Much of this is due to the fact that the *Eagle* has had to be assembled as part of a very busy schedule and to strict deadlines. This is *NOT* a kit to put together working to a strict regime. Here is as subject to take—say—a couple of years assembling at leisure, completing only as much as you feel you can at any one time and putting the kit aside whenever you become frustrated or stressed. Being able to create something to your own timescale and

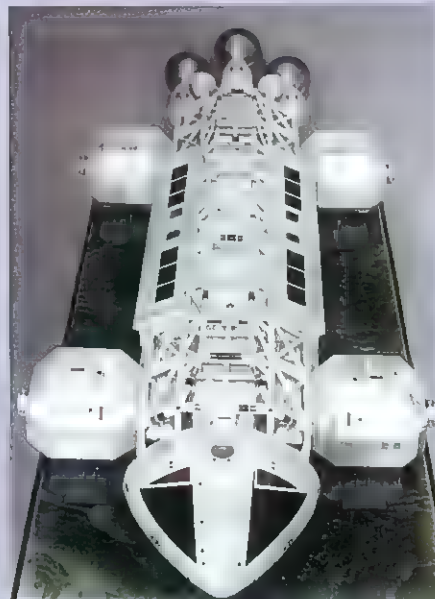
at your own pace is, after all, what your hobby is all about.

It has to be said that the finished kit is *brehtaking*. The day I completed it in jubilation I invited in a neighbour who has been watching my progress recently over the fence as I had stalked the garden holding pieces until they set, turning the air blue with basic English that cannot be repeated here... He was knocked out by the finished product.

The burning question most of you who have been following this series of articles must want to ask is—*Roykirk, at the end of the day, is A-B's 44" Eagle worth £1250 of my hard-earned pounds?* Well, If you have the money, the time, the patience, the *skills* and are used to lateral thinking then I would say, "Yes, it is." The end result is unlike any other 'kit' you're ever likely to come across or make. It's a show-stopper your friends can't help but notice as it dominates whatever space you choose to display it in. If carefully constructed it is virtually *identical* to the largest *Eagle* studio miniatures and is an amazing achievement. I would point out, however, that you need to keep in mind that this is an extremely challenging subject to make that requires copious amounts of hard work, thought and planning at every stage and I would recommend that you be prepared to replace certain aspects of the *Eagle* as supplied (the elbow joints on the leg pods, for example) with stronger materials. Had I had time I would also have drilled the H-section 'cradles' under the leg pods and glued the supporting cradle 'legs' through these to result in a stronger structure.

I also have a niggly to voice in that certain of the materials provided





The 'Giant' takes up residence at Chateau Roykirk—finally complete after eight months work.

were supplied in 'just enough' quantities. I ran out of aluminium rod for the rear engine section, for example, and also had to scout the area for rare 2mm machine screws (I eventually found them some ten miles away at a specialist tool store) when I found myself just four short at a late stage in construction. I would strongly recommend to *A-B* that a 'safety net' of things such as the hard to find tiny nuts and bolts is supplied with the kit so that, if one disappears under the table never to be seen again, the modeller can fall back on ample replacement supplies.

A final summing up? *Phew—it's finished. Wow, it's magnificent. Strewth, it's big. ...Can I do make something simple next time Mr. Editor, Sir, please—like a one-piece monolith kit, for example?*



Enigma Variations recreating wartime wizardry

geoff topping

It's been quite some time since SFFX last spotlighted the work of master prop maker Terry Reed. Terry and co-worker John Hatt are based at Pinewood Studio's Otter Effects in the UK. On a fine day in June I made the trip to Iver Heath, Buckinghamshire, to discover that Terry had recently been asked to recreate in exquisite detail a fascinating piece of wartime history for a new movie. Terry's work really does epitomise the pantheon heights that prop makers should aspire to achieve as this latest project—the creation of an accurate, working replica of the WW2 German *Schlüsselmaschine E* (a.k.a the infamous Enigma Cipher Machine) for the aptly titled feature *Enigma*—clearly demonstrates.

GT: Terry, could you describe how you went about your research and development for the *Enigma* project?

Terry Reed: Well, the production wanted John and myself to produce an exact match of the original three code-drummed *Enigma* that was being used on the film, so that they could swap between the two during the shoot. The main reason for building it was that the indication lights on the original weren't bright enough.

At first they asked if I could rectify this problem on the original but, as the machines are worth so much, I said that I didn't want to touch it. They came back to me later and asked if I could produce a practical *Enigma* prop to match it, which I agreed to do.

GT: What was your main source of reference?

TR: As well as various specialist books on the subject, one of which we had to order through a secondhand book shop in the US, we visited the WW2 British code breaking facility at *Bletchley Park*.

Bletchley is now a museum and they allowed us to take reference pictures of their *Enigma* machine. On the original there were a number of pieces missing. These included spare lighting bulbs, etc. So, through all the accumulated source material we had gathered, we were able to piece

together the correct appearance of the *Enigma*.

GT: Is that a *MK3 Enigma* machine?

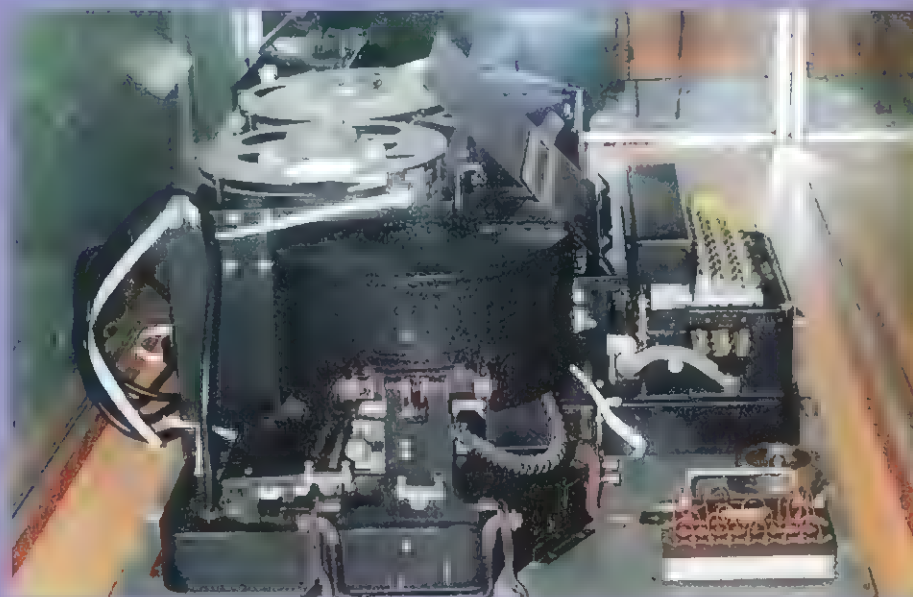
TR: We're not actually sure. There were so many different models produced. They're all roughly the same size, but they have minor differences. We were also asked to produce a four-drummed version, as used by the *Kriegsmarine*; the German navy. So I made a separate four drum cover which could be placed over the top of the prop



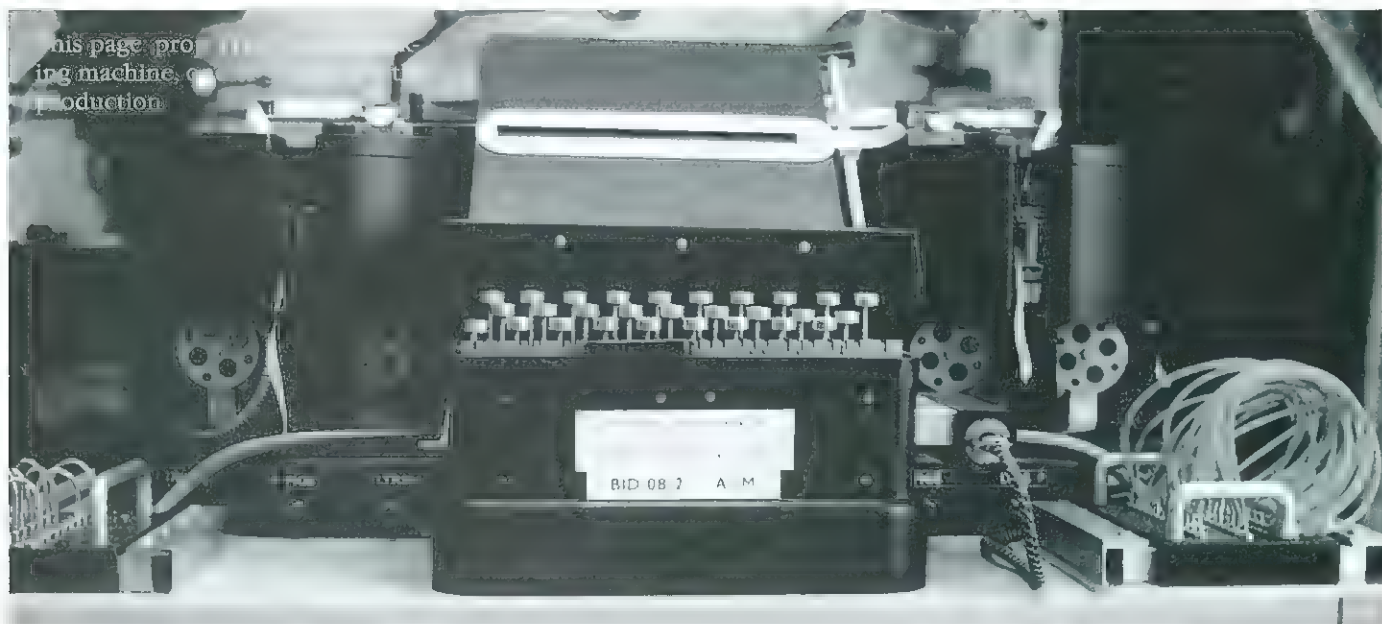
machine to change its appearance.

In the lid of the machine there is an instruction label which we needed to reproduce. We couldn't find any reference material for it anywhere. We had by now obtained the secondhand book from the US, which had a clear picture of the label. We photographed the label, blew it up and produced a 1/1 clear vinyl label from this. The repro label was then attached to a paper backing, which was distressed with tea.

The wooden case on the original was quite battered, so as well as making up a case for the prop version, I had to make one for the original so that they could take the



Top: prop Enigma machine. To enable them to read on camera it was necessary to make the lamps brighter than the originals. Above: one of the original British decoding machines at Bletchley Park museum.



Enigma out and put it in the new case. I made the cases from oak panels.

The code of the day is set by the operator according to instructions given to him by headquarters. The first code wheel goes round twenty six times which then engages the second drum by one notch.

The second drum revolves thirteen times before knocking the third wheel round once. It was impossible for us to make the machines perform accurately in the four-week construction period, though.

John Hatt: It would have taken us six months to do it correctly!

TR: Normally when one depresses a key repeatedly a random light will illuminate, but we made it possible to pre-set which code lights would illuminate by patching the plugs on the lamp board on the front of the machine.

JH: The production wanted the prop to be able to pre-set the code so that it would be the same on every take. For example, they could plug *Q* up to *A*, thus *A* would always illuminate as required. Obviously the code mechanism would not tumble over on the *Enigma* prop as on the original. Mechanically plugging whichever letter you have assigned to *Q* meant that it was guaranteed to come up every time.

TR: However, John is now building a fully practical *Enigma* for himself and it will actually use the same wiring method as the original.

JH: However, my *Enigma* has a different layout to the one we produced for the film. The keys on my model hit micro-switches, while the original German machines worked from an open switch.

TR: The *Enigma* was used in the following fashion: the operator would push down on the keys and another would read off the code from the lit windows, telling the radio operator what to write down. The radio operator would then transmit the final coded message in Morse code. For a bit of fun I have also made up a transmitter.

(At this point, Terry brings out a wood cased *Wehrmacht*—German Army—radio transmitter. As he switches it on the valves illuminate and then he demonstrates the working Morse tapper.)

It's not an exact copy, but it's close enough.

GT: How long was the *Enigma*'s construction period?

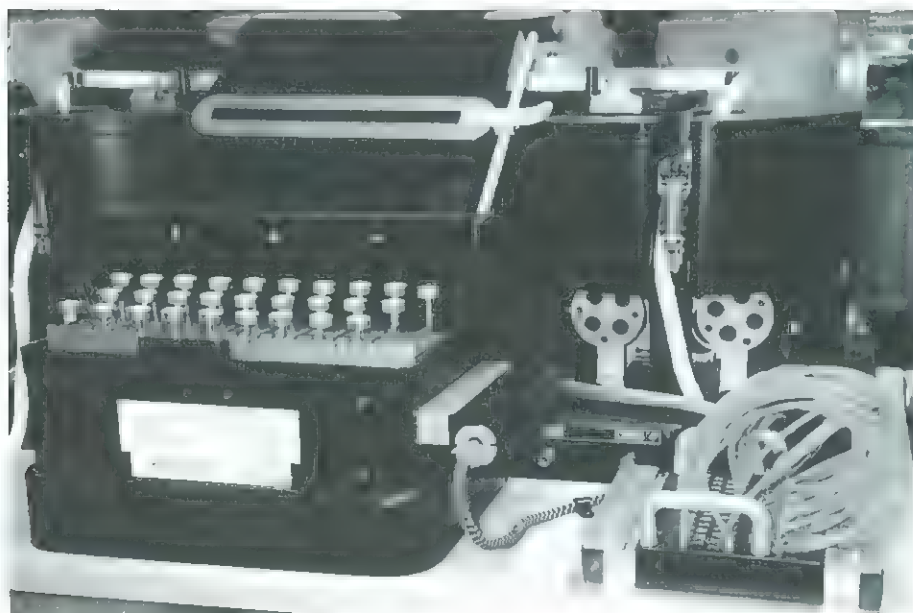
TR: Around a month.

JH: Four weeks, two days exactly. The first day was spent photographing the original unit and taking dimensions.

TR: It wasn't a lot of time, but I also managed to make some other pieces based on those I borrowed from Mick Jagger's *Enigma* collection.

GT: Mick Jagger of the *Rolling Stones*?

TR: Yes, Mick is, in fact, a producer on the film and recently bought an original *Enigma* machine at auction. It came complete with the spare code drum box, which holds three spare rotor drums. So I made a repro code drum box based on Mick's to accompany the prop *Enigma*.



GT: What materials did you utilise in the construction of the *Enigma*?

TR: The main construction was in Perspex and ABS vacformed pieces. The keyboard and window lettering was produced by the same printing company who made the instruction label. The wire in the lid is, in fact, shoelace. We could not find any original patchcord wire, so these sufficed and are almost indistinguishable from the original wire. The dimmer plate in the lid is so that the machine can be used at night. It was made of tinted acrylic. The cover case was made from oak. All the fittings were machined up in the workshop and were nickel-plated.

GT: How did you achieve the period stove enamelled paint effect on the vac form panels on the *Enigma*?

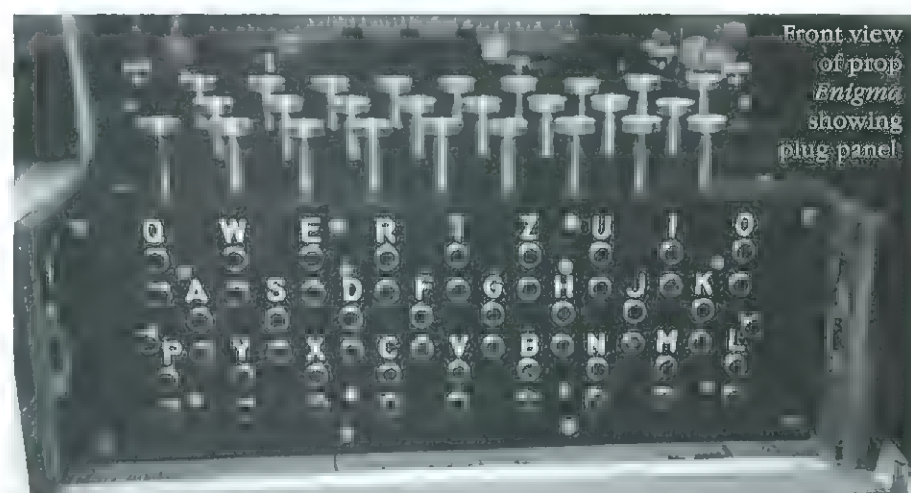
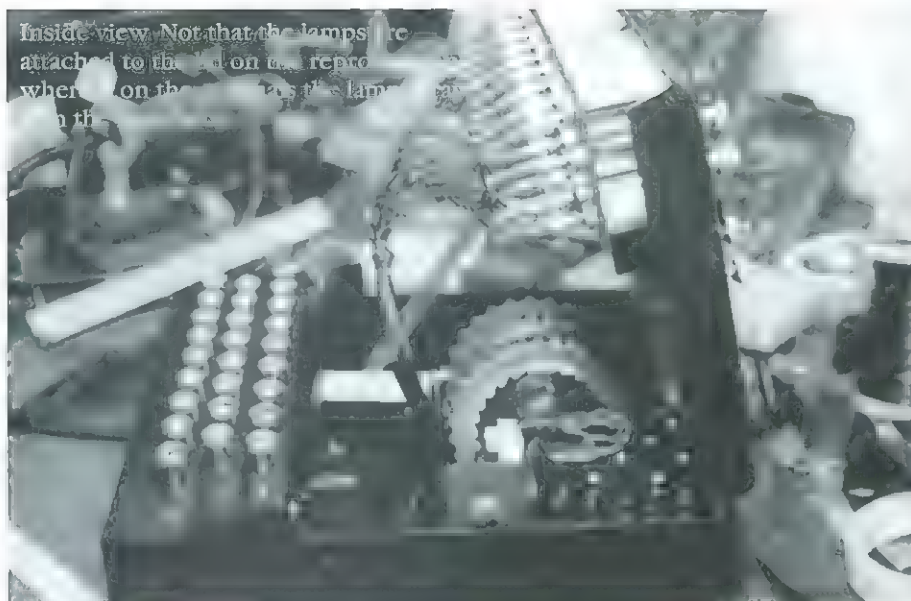
TR: Well, we couldn't obviously stove enamel the vac form pieces as the paint is baked on, so we used a highcote crackle finish. We found that we couldn't obtain the right finish with the paints available in this country, so we managed to obtain the last two cans of paint similar to the type used on the original machine from an American company. It's absolutely amazing. You have to paint it on and then bake it at around eighty five degrees. After [around] six hours it develops the textured effect and after twenty four hours it's dry.

GT: I take it that you machined up all the working components yourself?

TR: Yes, all except for the main rotor drum wheels which were computer cut for us by an outside contractor. They had to be accurate; otherwise we could have had problems such as the letter windows not illuminating in the right order. There are a lot of close-ups in the film of the letter windows, so we could take no chances here.

GT: Did you make anything else for the production?

TR: Yes, we made three non-practical *Type X* machines. These were the British-made cipher machines, which were based on the early commercial *Enigma*. However, the British developed the code further and, in 1941, the Germans had given up trying to break the *Type X* code. Again I referred to the *Type X* at *Bletchley*. They have a cased complete unit, which we didn't want to touch



due to its value, and another with missing parts. I took measurements from the latter. The rest was guesswork! We made these in a week. The *Type X*s were to be used as background dressing.

GT: What other productions have you worked on recently?

TR: I also produced the garrotte chair for the last *Bond* film, *The World Is Not Enough*. The chair took three and a half weeks to construct. We were working to art department designs.

GT: What was the chair constructed from?

TR: The base was made from ply and a veneered finish was laid and glued on top and then varnished. The thread controlling the restraints had to be specially cut, so that the restraints would come out quickly.

GT: And the restraints?

TR: The brass collar and cuffs were

made of brass. We lined these with leather for the comfort of Pierce Brosnan.

GT: How long did it take you to make?

TR: It took the two of us around three to four weeks.

GT: Did you have a sitting with Pierce, to make sure that everything was right?

TR: Yes, we had one sitting to check that the height was correct. The chair worked, it would have probably killed somebody if I hadn't disconnected it once or twice! (Laughs.)

GT: ...and what of the future?

TR: Well, I am now working on some bits for *Tomb Raider*.

GT: We look forward to catching up with you soon. Terry, John, many thanks.

Dinky classics

The Gerry Anderson diecasts story

a special two-part article by martin gainsford

Over the last four decades there have been literally thousands of items of merchandise released based on the television series of Gerry Anderson. The consumer has had the opportunity to buy everything from Fireball XL5 underwear to Captain Scarlet and The Mysterons talcum powder; Thunderbirds wallpaper to UFO handkerchieves. There is, however, one range which will forever remain as the best loved, best remembered and certainly the best produced—the line of diecast models created by Dinky Toys.

Liverpool-based Dinky was a subsidiary of well known British company Meccano, famous the world over for a huge range of metal construction sets. Owner of the company, Frank Hornby, decided that a line of cheap but well produced diecast toy vehicles was a feasible venture and these *Pocket Miniatures*, as they were originally referred to, were a huge success. Between 1964 and 1969, arguably the golden years for Gerry Anderson and his production company *Century 21*, the Dinky Toy line was taken over by the Lines Brothers Partnership

At this particular juncture character-based merchandising was at a new high. With potential licencees battling for such well known 'properties' as *James Bond*, *The Daleks* and *Batman*, it became apparent to Dinky executives that they themselves were in need of a television programme with which to ally a range of toys to save them from being left behind their rivals. The other famous die-cast toy company of the day, *Corgi*, itself a subsidiary of the larger firm *Mettoy*, was experiencing phenomenal success

with its line of vehicles based on TV and film secret agents and super-heroes. Their vast range, which included cars seen in *The Avengers*, *The Saint*, *The Man From U.N.C.L.E.*, *Batman* and, of course, the 007 movies, was one of the most popular ever seen in Great Britain, where character-based merchandise was still comparatively new territory for many companies. After witnessing the success enjoyed by other companies previously responsible for merchandise based on earlier Gerry Anderson *Supermarionation* programmes, Dinky saw the latest production, *Thunderbirds*, as the property with which to affiliate themselves. Little did they realise that a relationship was to be formed which would spawn some of the most popular toys in the history of licensed merchandising. *Corgi* had similar intentions and actually went as far as to produce a prototype version of the famous pink *Rolls Royce* seen in *Thunderbirds*. *FAB 1*, Richard Gulle, at that time merchandising manager for *Century 21*, decided that Dinky, however, was the company to whom he would grant the license to

produce diecasts based on the programme as he had great admiration for the work of one of their designers, Joe Fowlman. The irony of this decision is evident when it is revealed that many of the toys already produced by *Corgi* were based on properties whose merchandising rights in the UK were held by *Century 21*. *The Saint*, *The Monkees*, *The Man from U.N.C.L.E.* and *The Green Hornet* were all owned in these terms by Anderson's merchandising arm and proved to be wise purchases for them.

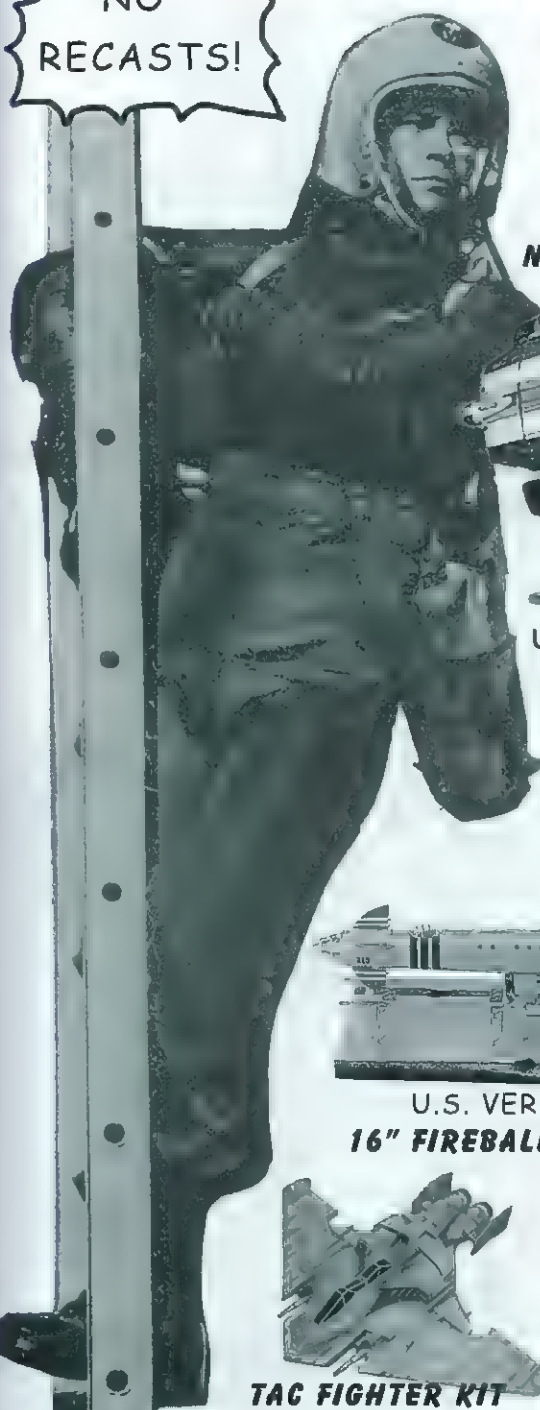


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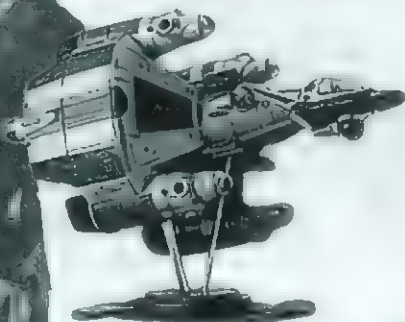
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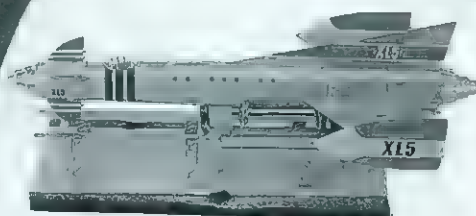
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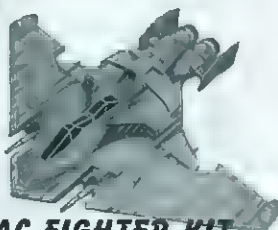
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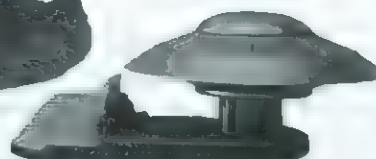
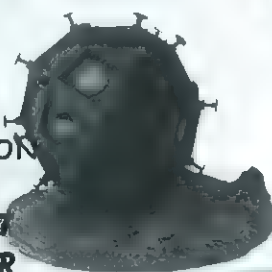


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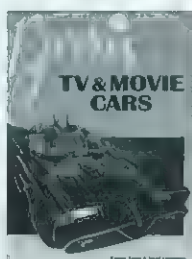


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under the watchful eye of managing director and ex RAF colleague of Gerry, Keith Shackleton. Through Culley's decision to grant the license to *Dinky*, *Century 21* were to receive massive royalties each year from two of the world's largest manufacturers of diecast toys.

In 1966 *Dinky Toys* were proud to announce to the trade that a line of **Thunderbirds** diecasts was ready for imminent release. Youngsters all over the country waited with bated breath for the release of two of *International Rescue's* most important pieces of hardware in miniature form. The first toy available was *Lady Penelope's FAB 1*. Bearing the landmark sale and production number '100', the 147mm miniature *Rolls Royce* was an immediate hit with serious *Dinky* collectors and children alike. Designer and engineer, Joe Fowlman, was responsible for one of the most ingenious series of gimmicks yet incorporated into a diecast toy. Although packed with 'action features', not one button was visible. Fowlman's design was something of a breakthrough in the field of toy construction as the various features incorporated into *FAB 1* were triggered by application of pressure to the suspension system. This

allowed a set of four harpoons to be fired from the rear of the car and the 'Big Blockbuster' to be released from behind the front radiator grill which was hinged to allow for the 'launching'. *FAB 1* also came with hand-painted plastic figures of *Lady Penelope* along with trusty man-servant *Parker*. The clear plastic

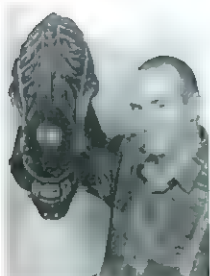
canopy slid back to allow access to the figures. This facility was largely redundant as the tiny characters were not easily removed from the interior. With *FAB 1* coming in a beautifully painted box with an equally attractive cardboard inner display plinth to which the aforementioned missiles and harpoons were attached in a small plastic bag, **Thunderbirds** fans were treated to what was to be the first in a line of toys based on Anderson programmes the like of which had never been seen before.

Such was the popularity of **Thunderbirds** and the *Dinky Toys* based on the programme that *FAB 1* was in constant production for the next decade. As with all of the toys in the range variations became apparent to the serious and not so serious collector. The car remained much the same, although a 'shocking pink' version briefly graced toy shop shelves. The 'Blockbuster' missile tip varied between red or blue but neither of these differences affected the popularity of the toy. One aspect of *Dinky* presentation which, to this day, brings groans of disappointment, involved packaging changes. As described previously, the first edition *FAB 1* came in a wonderful solid cardboard box with illustrated inner display stand. During the early 1970s the company sought to save money due to the rapidly increasing cost of producing high quality diecasts. Packaging was changed and the *Rolls* sat on shelves in a bland 'bubble-top' display box. The toy was as appealing as ever but collectors were saddened by the route being taken by the Binns Road company in order to 'save a few bob'. For collectors these variations in packaging, which affected the entire Anderson range, are a constant source of discussion. Many spend hundreds of pounds in order to own each variation, even if they already own examples of a particular vehicle in different style boxes.

Given the success of *FAB 1* it was apparent that a companion vehicle wouldn't be far behind and, in 1967, *Thunderbird 2* was released to eager collectors. At little more than 143mm, *International Rescue's* 'huge transporter craft' was another success story for *Dinky*. Recognised by many as the most popular vehicle seen in any Gerry Anderson programme, *Thunderbird 2* came in a flat, almost square, box with a display tray as was to become the norm with this line of toys. It bore the production number '101' and proved popular enough to remain in production, in one form or another, for the next ten years. As with *FAB 1*, *Thunderbird 2* suffered from packaging changes and even worse design changes. The earliest version came painted in the 'pea' green colour seen in the programme, or at least as seen in copies of *TV Century 21* comic (UK televisions were black and white at the time). Shortly after the first production run of *TB 2*, paint shop staff changed the shade to a metallic green. During the 1970s things were to get far worse. With the advent of cost-cutting on packaging it was decided, possibly as something of a trade off to collectors, to re-design *TB 2*. The new version was larger—153mm—and came with legs sturdier than the easily broken ones present on first editions. This particular version hit the shops in 1974 and was available for four years. Readers might wonder why things were worse if the toy was larger and sturdier than previous incarnations. The reason for such disappointment was the *colour*. In their wisdom *Dinky* decided the new *Thunderbird 2* would be painted *blue*. Later it was to become black and blue. What were *Dinky* up to? Many reasons for the bizarre paint schemes seen on *Dinky* Anderson toys have been offered in recent years. It is widely reported that paint shop staff were encouraged to use up odd tins of paint as a cost cutting exercise. Another story is that 'advisors' noted that children were drawn to toys of certain colours and not others, regardless of how they appeared on the television screen. All I can remember as a child in relation to these toys is how saddened I was to see often magnificent representations of vehicles I adored being painted in such ridiculous colours. It wouldn't have been so bad if *Dinky* had done it all the time but many of the toys in the range were near perfect in terms of authenticity and colour.

TB2, when originally released, was regarded so highly it was the subject of

Anniversary Issue



Congratulations on your 50th issue and may there be many more! Best wishes—
*Harry Harris—
The Aliens
Collection and
Archive.*



an in-depth article in the July 1967 edition of *Meccano Magazine*. As Dinky were part of the Meccano group their toys were often promoted in the pages of the magazine. With the popularity of the Anderson programmes, and the Dinky Toys based on vehicles seen in them, rising with each successive release, it became a regular occurrence for the spotlight to be shone on the latest Anderson show and the diecasts it spawned. **Thunderbirds** was, of course, no exception and the following article by Chris Jelley was indicative of the enthusiasm shown by people of all ages for the programme and the toys themselves:

*All the publicity surrounding the highly popular television puppet series **Thunderbirds** tells us that 'Thunderbirds ARE GO' and as far as I'm concerned **Thunderbirds** most definitely are go! What might be a 'silly children's programme' to some people is, to me, one of the best produced and most skilful shows on television. Not only are the puppets themselves excellent models and animated by experts, but the equipment and the 'sets' in which they appear are amazingly detailed and real. All this, coupled with the skill of the photographers filming the various programmes, raises the series well above the ordinary run-of-the-mill TV show, from a technical point of view alone. Add to this the gripping suspense of the average **Thunderbirds** story, bearing in mind that it is aimed at youngsters, and you have a top-notch programme.*

*All well and good, but what, you may be wondering, has this to do with us here? The answer is simple. No matter what individuals think of **Thunderbirds**, Meccano Limited, as a company, have no doubt that **Thunderbirds** are go. Already they have produced a Dinky Toy model of FAB 1- the futuristic vehicle owned by Lady Penelope and driven by Parker- of the TV series. Now they have come up with another two International Rescue specials- **Thunderbirds 2 and 4**.*

*Followers of the series will know that International Rescue, around which the show is written, is an organisation dedicated, as the name suggests, to almost impossible rescues, not only on land, but also under water, as well as in outer space. To help them carry out their tasks, the heroes are equipped with a variety of specialised machinery, mostly rocket-powered, which enables them to do just about anything. The only problem is how to transport the required machinery to the scene of a rescue when needed, and the originators of the programme have hit on the perfect answer- **Thunderbird 2**! In effect, **Thunderbird 2** is little more than a giant motorised chassis like a space ship with an enormous hole punched in the middle. This 'hole' is designed to accommodate a removable pod or container in which all the necessary equipment is carried. When you think about it the idea is ingenious. International Rescue can have any number of containers, each ready-loaded with all the equipment*

*necessary for a particular job. It is only then a matter of moments for **Thunderbird 2** to pick up everything required in an emergency, thus saving hours of valuable time.*

*Dinky Toys' **Thunderbird 2**, marketed under Sales No: 101, is made under licence for Century 21 Toys Ltd., who hold the rights on **Thunderbirds**, and it certainly captures all the 'action' of the original. Manufactured almost entirely from die-cast metal for strength, it is of course, an exact reproduction externally on the prototype, from the 'flattened cigar' shaped body to the raised platform tailplane, and incorporating the stubby, swept forward wings. Protruding aft beneath the tailplane are the rocket exhausts in red plastic with silver inserts, which strike the eye and give an appearance of power to the whole model. Casting detail is very good, showing body panels, rivets, windcreens, flaps, etc; but of far more interest is the 'pod'. Yes! Like the original the Dinky is fitted with a removable container complete with a drop-down door and carrying, believe it or not, a tiny plastic replica of **Thunderbird 4**! In the TV show, you may remember, **Thunderbird 4** is used for underwater work and, as such, is comparatively small and compact. The Dinky Toy version, of course, must be small to fit into the container, but before anybody starts complaining, I should explain that it really comes as a bonus, **Thunderbird 2** being the star of the piece, so don't go talking about 'fiddles' or anything like that. The pod itself incorporates two free-running rollers, allowing it to be moved into position and also serving as an undercarriage for the complete model when the pod is in place in the aircraft. Now we come to what I feel is the most intriguing feature of the whole toy- the 'legs'. Before describing them, however, we should take another quick look at the TV programme to recap the usual operational methods of **Thunderbird 2** when arriving at the scene of a rescue. After finding a suitable landing site, you will remember, the ship hovers over it for a few moments, then slowly lands vertically. As soon as it settles, the pod is released, and four telescopic legs raise the main ship until the container door is clear and can open. **Thunderbird 2** then takes off, leaving the container behind, except on some occasions when it remains in the raised position.*

The important items here are the legs and I am pleased to say that the Dinky Toy, also, is equipped with four retractable legs. Considering the small size of the model, of course, these could not be made telescopic, but they fold into the body, and are spring-loaded, so that a touch on two little buttons, one at each side, sends them shooting down into position. Consequently, it is possible to reproduce almost the exact original operations followed by the original and even if the absolutely identical sequence cannot be followed, you can still have loads of fun.

Overall, the model is 5 1/4" long by 1 1/4" wide by 2 1/4" high on its legs and a height of 1 1/4" with the legs retracted. The pod alone is 2 1/4" long by 1 1/4" wide by 1 1/4" high, while Thunderbird 4 inside is 1 1/4" long. Thunderbird 2 is finished, generally, in the correct green gloss with yellow legs and, as already mentioned, red rocket exhausts, whereas little Thunderbird 4 is yellow, also with red rocket exhausts. Various identification names and numbers in white lettering appear on the body, wings and fins of Thunderbird 2 to add the final touch to an excellent Dinky Toy.

This, then, completes the model, but, as this is probably the last issue of Meccano Magazine to be published, I should like to say goodbye to all my readers and should like to thank all of you who have written to me over the past few years. Don't forget, however, that Meccano Limited is still very much in existence, and that new Dinky Toys will continue to appear every month. Watch television and the Press for details.

The essence of Chris Jelley's rather downbeat final paragraph was to be, thankfully, without foundation. Meccano magazine was to continue publication for a great many years and included features, reviews and front covers relating to the Dinky range of Anderson-themed vehicles on numerous occasions.

With the amazing success of **Thunderbirds** diecasts under their belt, Dinky were anxious to follow with another Anderson related series of vehicles. In the autumn of 1967, when *Century 21*'s latest programme **Captain Scarlet and the Mysterons** first aired on British

television screens, Dinky were already preparing for the release of three key vehicles seen in the show.

The Mike Trim-designed *Spectrum Patrol Car* and *Maximum Security Vehicle* were two of the cars immortalised in diecast metal by Dinky. The *Patrol Car* was one of the vehicles used most frequently in the programme by Captains *Scarlet* and *Blue* during their assignments. At 121mm in length and originally released sporting a red metallic livery, the *SPC* was one of Dinky's most accurate toys. It had the added bonus of a 'screaming jet engine sound' when the car was pushed along. Personally I was always a little disappointed with this particular toy as a child as, aside from the 'noise', it did little else. Nonetheless the vehicle was a big seller and was released with different packaging on several occasions well into the 1970s. It was during these later releases that we were once more treated to some of the Dinky paint crew's flights of fancy. Dinky Toy no: 103 was painted bronze for one production run and, more outrageously for purists, *blue*.

The *MSV* never enjoyed the luxury of being painted the correct colour at any time during its five year production run. When it last left the doors of the Binns Road factory in 1973 it was white. The only variation noted in no: 105 is the use of adhesive red lines along either side of the vehicle as opposed to the sometimes seen sprayed-on stripes. Although the colour never matched the silver-grey seen on television the Dinky version matched its on screen counterpart with its gull wing doors and overall rugged appearance. With the doors open access is allowed to the interior. Some have commented on the unusual cargo held within but, nonetheless, it was all about play value in those days and, in this respect, a couple of plastic crates of 'radioactive isotope' were most welcome. In all honesty it must be said that the 'isotope' does look remarkably like gold bars but as a kid I didn't care too much. Some *MSVs* have been found to have a clearly visible driver but this particular release is rarely seen. Both of these vehicles sported the usual exemplary artwork on the boxes although, sadly, neither came with inner plinths—unlike the jewel in the crown of the **Captain Scarlet** line, the *Spectrum Pursuit Vehicle*.



The *SPV* was one of the biggest selling diecasts of the 1960s. It easily held its own against the phenomenal sales of *Corgi's* 007 *Aston Martin* and *Batmobile*, based on the car seen in the Adam West TV show. At 150mm in length it matched, almost perfectly, the scale of the two other cars in the series. The light metallic blue colour was one of the closest approximations of a paint scheme seen in an actual programme than for any of the toys produced by Dinky. It was a solid, tough looking toy and was to become a legend amongst diecast collectors. Designer Joe Fowlman once more incorporated many of the features seen in the programme. Drop down tracks at the rear were an interesting feature as they were never seen in use on TV. The two gimmicks most popular with youngsters, however, were the missile—again launched by application of pressure to the front suspension—and the spring-operated opening door. Just as in the programme, the door section opens outwards and the seated figure of *Captain Scarlet* is lowered safely to the floor. Like the missiles available with *FAB 1* before it, the *SPV's* missiles featured either red or blue rubber tips. Later 'bubble top' releases suffered from a black rubber front bumper as opposed to the more authentic white seen in earlier releases. Although not the rarest Anderson Dinky by any means, due to its magnificent design and unparalleled play value, the *SPV* is a must for anyone with even the slightest interest in one of *Century 21's* most spectacular vehicles.

Concluded next issue...

Director's Cut

A guide to DVD FX-tra features

sarah hemmingway • jack marshall

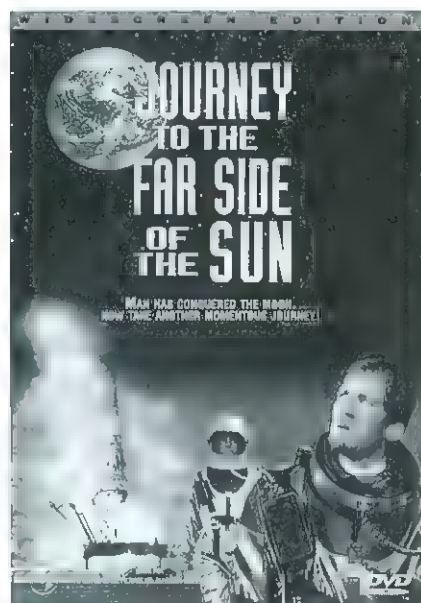


Bicentennial Man

(Columbia Tristar CDR 340198). **R2.** Judging by the low price at which this DVD is available in various stores, the glut of unmoving copies on shelves, and the speed with which the feature disappeared from UK big screens, I would guess this film bombed mightily at cinemas. This is a great pity, as *Bicentennial Man* is, in this reviewer's humble opinion, a very good science fiction film indeed. Yes, I know it's not my job to comment on plot for this magazine, but I just had to get a quick thumbs up in for a noble attempt at translating an Isaac Asimov (with Robert Silverberg) robot story for the screen. OK—back to the special features. Actually, these aren't that special at all. A short 'making of' featurette is included, which offers a few (certainly not enough) intriguing insights into the remarkable robot suits that Steve Johnson's *XFX* house created for the feature (see article this issue) and some glossy but insubstantial behind-the-scenes footage of the movie being lensed. Add the theatrical trailer and a trio of written filmographies and, FX wise, *that's it*. No insight into the superb digital visuals, no shots of the suits being made and operated. Here are disappointing tag-ons that almost

seem to be after thoughts. In the case of *Bicentennial Man*, however, don't let a lack of pithy FX-tras put you off—the film's low key effects are flawless, naturalistic and beautifully executed. *Buy it ...* it didn't prove to be a blockbuster—but then true class rarely pleases the majority. **SH**

Special FX features verdict:
Unremarkable.



Journey to the Far Side of the Sun

(Universal 1D4297USDVD). **R1.** This was Gerry and Sylvia Anderson's first excursion (1969) into big-screen live action. Not available in the UK, the region one version of this DVD was discovered on Amazon's US site. Apart from chapter selection, the release offers no special features, but is included here because the film itself is a rare treat for FX fans, featuring a number of showcase miniature sequences devised and executed by the legendary Derek Meddings and his team. Shot outside against God's sky, the *Eurosec* rocket launch is a triumph of miniature construction and photography, as is the arrival of Roy Thinnes' doomed astronaut *Glenn Ross* in Portugal courtesy of a flip-nosed futuristic

airliner with removable passenger section and the climatic blast-fest destruction of the *Eurosec* rocket base. Other FX sequences, such as the spiralling crash of the *Dove* lifting body and the vertical take off of its otherworldly *Doppelganger* counterpart, are less convincing, but the majority of Meddings' work for the feature is characteristically flawless. Picture quality is pleasingly crisp, and it's an absolute joy to finally view this film in widescreen format with the reversed sequences restored (UK small screen transmissions in recent years have had the purposely reversed shots—meant to represent life on a mirror-image of Earth on the other side of the sun—flipped so that they read correctly by some well-meaning TV tech!). **JM**

Special FX features Verdict: No features, but FX in film. Unbeatable.

STANLEY KUBRICK COLLECTION



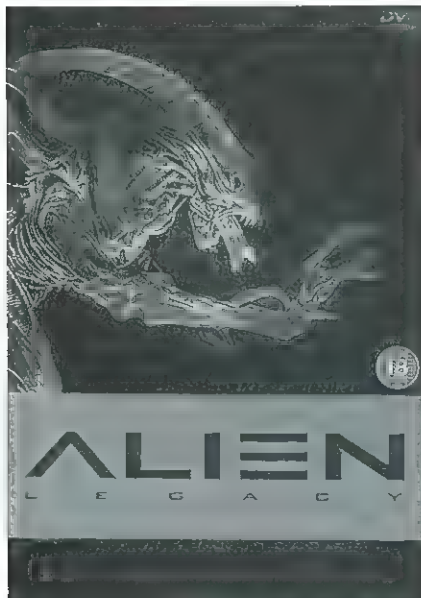
2001: A Space Odyssey

2001: A Space Odyssey

(Warner Brothers 65000). **R1.** Again, a US DVD, preceding the forthcoming UK release which is rumoured to offer rather more in the special features department. Here, by way of package-enhancing FX-stras, we only have a couple of theatrical

trailers—one for 2001, the other for 2010, plus what is billed as 'an interview with Arthur C. Clarke'. This latter is, in reality, a formal after dinner speech given by the legendary author around the time of the film's release, ushered in by an off-centre artwork title card and grainily filmed (no doubt on 8mm) from one locked-off angle. To be honest, I fast forwarded through much of the verbiage as, after the first few minutes, I found it, to be frank, deathly boring (sorry, Sir Arthur!). Whilst I understand (rather than appreciate) the rarity of such a piece, much better received would have been behind-the-scenes footage from this classic, a gallery of model and FX shots, an interview with Kubrick, a visit to the model shop... *anything*. Nice film (even the 'interval' is included so you can pop into the kitchen for some popcorn!) shame about the 'extras'—wait and invest in the R2 version. **SH**

Special FX features verdict:
Unforgivable.



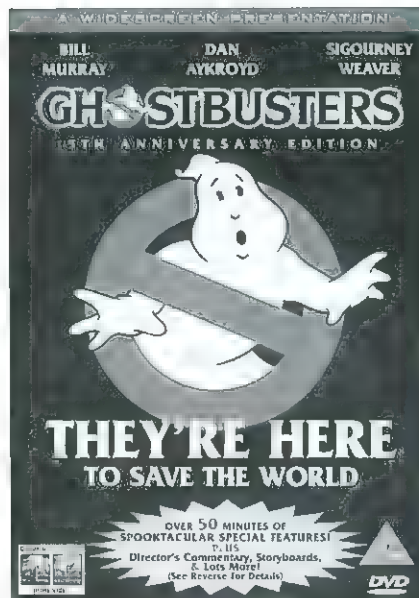
Alien Box Set

(20th. Century Fox) **R2**.

The real jewel in the crown in this issue's reviews has to be this magnificent four-film (five-disc) celebration of the pin-sharp DVD medium. I know this has been out for some time now, but as an FX magazine we would be remiss not to recommend it. Exquisitely presented films aside, the box set offers a top value package of special FX features. Heading the list is, of course, the *Alien Legacy* sixty-minute extra DVD, packed with interviews including Ridley Scott, Giger, Dan O'Bannon, Ronald Shusett, Ron Cobb, Brian

Johnson, Nick Alder and prop archivist Bob Burns (send everything to me *NOW*, Bob!) The *Alien* DVD itself also features cut scenes and outtakes, an artwork and photo gallery, storyboards and an English audio commentary by Scott. It's a case of diminishing returns with the next three films—*Aliens* offers an informative interview with James Cameron conducted by *Cinefex*'s Don Shay; mostly silent (but priceless) behind the scenes footage of—amongst others—the colony miniature, atmosphere processor miniature and the testing of the full size mock-up queen (with sound) and a stills photo section featuring props and sets. *Alien 3* includes a 'making of' made-for-TV documentary and *Alien Resurrection* a short behind the scenes featurette. Despite the comparative paucity of FX features served up with the last two titles in the series, the overall extras package is exceptional. This set is an absolute sell-your-granny-if-you-can't-afford-it must have and represents the ultimate FX-tras template all DVDs should attempt to emulate or better. **JM**

Special FX features verdict:
Unbeatable.



Ghostbusters 15th Anniversary Edition

(Columbia Tristar). **R2**.

Isn't technology wonderful? I'm simultaneously viewing *Ghostbusters—15th Anniversary Edition* and writing this article on the same computer. The DVD has allowed so much more scope than the humble video tape with

the addition of behind-the-scenes footage, stills, interviews, etc.

The 15th Anniversary DVD release of *Ghostbusters* from *Columbia Tristar* is a real tour de force, not only giving the filmmakers' commentary that runs alongside the movie but also *TWO* featurettes, one shot at the time of the making of *Ghostbusters*, billed as the 'original featurette', and a second which includes key personnel (Richard Edlund ASC [Visual Effects Supervisor], John Bruno [Visual Effects Art Director], John De Cuir [Production Designer] etc.) discussing their roles in the production of the movie. As if that wasn't enough there are many behind the scene stills of sculptures, animatronics, props and miniatures in various stages of manufacture. But wait, there's more... several dropped scenes (dubbed the *scene cemetery*), around fifty + original design sketches by Bernie Wrightson et al, presented on a representation of a draughtsman's desk and storyboards that run concurrently with the corresponding final scenes. The final little gem is three examples of rough cuts and their final prints. You can flip between these with the remote as they are playing. All in all there is easily a further hour of entertainment here—and that's without listening to the commentary as you watch the widescreen presentation.

Both informative (you've the equivalent of a *Sci-Fi & Fantasy FX Collectors Special* on disk here in terms of the amount of technical information) and fun to navigate (the interface is a 3D representation of New York), the DVD represents excellent value for money for lovers of this movie and FX enthusiasts alike. **SH**.

Special FX features verdict:
Unbeatable.

Press releases, stills and DVDs for review (2 copies, please) should be sent to:

Director's Cut, c/o 564, Burnley Road, Crawshawbooth, Rossendale, Lancashire, BB4 8AJ, U.K.

Key: Region one denoted by **R1**, region two by **R2**, etc.

Jack Marshall is a scriptwriter for Vaulting Vole Video and contributes with permission. Sarah Hemmingway is a staff writer for Gravitas magazine.



A visit to Steve Johnson's XFX Studio

story and photos lee shargel

Steve Johnson's XFX studio is located in a new, modern building just north of Los Angeles. Like most contemporary special effects houses, it is unrecognizable as such from the outside. Inside, however, a very different story unfolds. Complex animatronic puppets, maquettes and life-size sculptures adorn the interior. Steve Johnson's assistant, Bob Newton, met me at the door, explaining that he was going to give me a personal tour of the studio and that I should have my camera loaded and ready...

...The lobby is a gallery of two and three-dimensional SFX icons. In one corner, for example, stands a full size poster of Robin Williams as the android, *Andrew*, from the recent genre outing *Bicentennial Man*. Another familiar movie creature hung above my head in the form of possibly the 80's most famous animatronic puppet—that hotdog-slurping, bundle of green energy *Slimer* from the movie *Ghostbusters* (see photo heading this page).

Although the studio employs a myriad of artists and technicians, it is Johnson's vision, drive and energy that fuel the creativity at XFX. A career spanning over twenty years in the special effects business began when he had the chance to meet legendary SFX artist Rick Baker in his hometown of Galveston, Texas. That chance meeting led to assignments on such movies as *The Fog* and *An American Werewolf in London*. As Rick Baker was assembling the team for *Greystoke—The Legend of Tarzan*, he again called upon Steve to lend his artistic talents to the production. Johnson was subsequently responsible for the location shoot in Africa with the animatronic apes used in the film. By the mid eighties, Steve was on his way

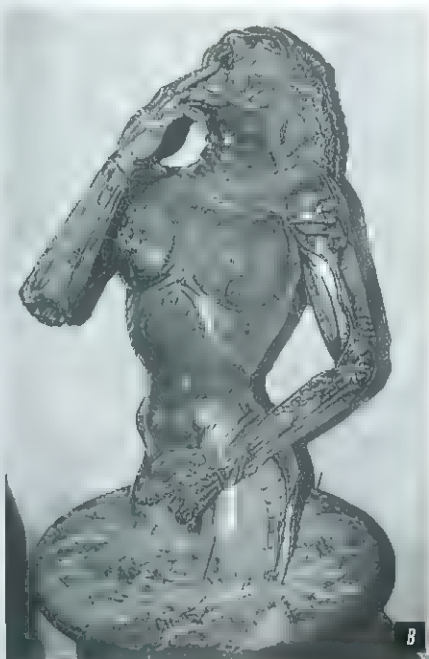
to making a name for himself in the special effects industry.

Appointed head of production at Richard Edlund's *BOSS Film Studio* creature shop he led a crew of technicians on such genre favorites as *Ghostbusters*, *Fright Night*, *Poltergeist 2* and John Carpenter's production of *Big Trouble in Little China*. Johnson was in great demand and, like other special effects artists of

that era (the 1980s), the entrepreneurial bug had well and truly bitten him. In 1986, he therefore formed his own company—XFX, Inc.

Abyss N.T.I.s

James Cameron selected Steve Johnson and his XFX team to create some of the most intriguing, other-worldly aliens ever shot on film. While most cinemagoers watching *The Abyss* thought the feature's bioluminescent underwater creatures were computer generated images (CGI), they were, in actuality, 'real' animatronic puppets, based on a final design by Steve Burg and constructed by XFX to actually operate underwater through a combination of cable and marionette techniques. (see photo E) The ethereal *N.T.I.s* (*Non-Terrestrial Intelligence*) were crafted from a variety of materials including fiberglass, silicone, rubber and vacform plastic laminated with iridescent film and flexible urethane. The puppets incorporated radio controlled, articulating limbs and fully operational, illuminating fiber optic arrays (around three hundred and fifty optic strands were built into each puppet) embedded in the urethane. Johnson is recognized as a leader in animatronics, specifically because he never sets limits for himself or his crew when it comes to experimenting with new materials. His creatures featured in *The Abyss* were unlike any puppets seen previously. Each was crafted from several molds and great care had to be taken to achieve absolute clarity of the translucent material. Internal 'organs' were also translucent, affecting subtle light plays within the creatures to help bring them to life. The *N.T.I.s* of *The Abyss* were a milestone in animatronics, but would represent only the beginning of a





Steve Johnson's XFX—specializing in the design and coordination of all aspects of Animatronic Creature Effects, Prosthetics, and Prosthetic Effects

Features

Bicentennial Man	Disney/Sony	Chris Columbus, Director
Monkeybone	20th Century Fox	Henry Selick, Director
The Red Planet	Warner Bros.	Antony Hoffman, Director
Magnolia	New Line Cinema	Paul Thomas Anderson, Director
Chill Factor	Morgan Creek/Warner Bros.	Hugh Johnson, Director
Detox	Universal	Jim Gillespie, Director
General's Daughter	Paramount	Simon West, Director
Election	Husker Productions	Alexander Payne, Director
Virus	Universal	John Bruno, Director
Wrongfully Accused	Constantine Films	Pat Proft, Director
Amistad	Dreamworks Pictures	Steven Spielberg, Director
Species 2	MGM	Peter Medak, Director
Blues Brothers 2000	Universal	John Landis, Director
Sphere	Warner Bros.	Barry Levinson, Director
U-Turn	Tristar	Oliver Stone, Director
Phantoms	Miramax	Joe Chappelle, Director
Kiss the Girls	Paramount	Gary Fleder, Director
L.A. Confidential	Warner Bros.	Curtis Hanson, Director
Buddy	Universal	Caroline Thompson, Director
Dante's Peak	Universal	Roger Donaldson, Director
Anacoda	Columbia	Lucha Liso, Director
Bad Moon	Morgan Creek	Eric Red, Director
Nightwatch	Miramax	Ole Bornedal, Director
Men in Black	Amblin	Barry Sonnenfeld, Director (Subcontract for Rick Baker)
The Eraser	Warner Bros.	Chuck Russell, Director
Species	MGM	Roger Donaldson, Director
The Stupids	Universal	John Landis, Director
Dead Man	Miramax	Jim Jarmusch, Director
Lord of Illusions	United Artists	Clive Barker, Director
Don Juan De Marco	New Line Cinema	Jeremy Leven, Director
Beverly Hills Cop 3	Paramount	John Landis, Director
Brainiac	Tristar	John Flynn, Director
Even Cowgirls Get the Blues	New Line Cinema	Gus Van Sant, Director
The Temp	Paramount	Tom Holland, Director
Freddie	20th Century Fox	Alex Winter & Tom Stern, Directors
Innocent Blood	Warner Bros.	John Landis, Director
Pet Sematary 2	Paramount	Mary Lambert, Director
Batman Returns	Warner Bros.	Tim Burton, Director (Insert Effects Only)
Brain Donors	Paramount	Dennis Dugan, Director
Suburban Commando	New Line Cinema	Burt Kennedy, Director
Highway to Hell	Hamble	Ala de Jong, Director
The Abyss	20th Century Fox	James Cameron, Director
Nightmare on Elm Street IV	New Line Cinema	Renny Harlin, Director
Dead Heat	New World	Mark Galanter, Director
Big Trouble in Little China	20th Century Fox	John Carpenter, Director
Predator	20th Century Fox	John McTiernan, Director
Poltergeist II	MGM	Boss Film Corp. Makeup Effects only Brian Gibson, Director
Fright Night	Columbia	Boss Film Corp. Tom Holland, Director
Ghostbusters	Columbia	Boss Film Corp. Ivan Reitman, Director
Greystake	Warner Bros.	Boss Film Corp. Hugh Hudson, Director
Videodrome	Universal	Lead Technician, Rick Baker
American Werewolf in London	Universal	David Cronenberg, Director Lead Technician, Rick Baker
		John Landis, Director Lead Technician, Rick Baker

Charmed
 L.A. Doctors
 Wake Up, America
 Can of Worms
 Mercy Point
 First Wave
 Virtual Obsession
 Quicksilver Highway
 Power Rangers
 Stargate: SG-1
 Poltergeist: The Legacy
 Warlords of the Galaxy
 The Face
 Here Come The Munsters
 Visitors of the Night
 The Outer Limits
 Next Door
 Reswell

Storm of the Century
 Scientific American:
 Alien Autopsy
 20/20: Alien Autopsy
 The Shining
 (Emmy winner, 1997
 best makeup for a mini-series)
 Oldest Confederate Widow Tells All

The Stand
 (Emmy winner, 1994
 best makeup for a mini-series)

Magic House
 Chromakey Theatre
 Hollywood Egomura
 Interactive Entertainment Creature

L.A. Cellular
 Magic the Gathering
 Serial Matress
 Harder's
 Resbak "Clones"
 Nissan "Alien Attack"
 "Y! Take Manhattan"
 NY/NY Hotel, Las Vegas
 Taco Bell "Aliens"
 Duracell World
 (12 spots)
 Kentucky Fried Chicken
 Sprite
 Posters Lager
 (3 spots)
 Cool Whip

Television

Warner Bros. Network
 CBS
 Fox
 Disney Channel
 Fox
 Sci-Fi Channel
 ABC
 Fox
 Showtime
 Showtime
 Showtime
 NBC
 Universal
 NBC
 Showtime
 Showtime

Specials/Miniseries

ABC miniseries
 PBS
 ABC
 ABC miniseries
 CBS miniseries
 ABC miniseries

Theme Parks

Walt Disney EPCOT
 Walt Disney World
 Japan
 Japan

Commercials

Mars Media/H.S.I.
 HKNI
 Bruce Dowd Associates
 Johns and Goodman Films
 Mars Media/H.S.I.
 Chai-Day
 Moxie Films
 Boss Film
 Ogilvy & Mather
 (12 spots)
 Young & Rubicam
 RSA USA, Inc.
 RSA USA, Inc.
 DMB&B

second season
 second season
 Gary Halverson, Director
 Paul Schneider, Director
 Michael Katelman, Director
 first season
 Mick Garrix, Director
 2 seasons
 3 seasons
 3 seasons
 Joe Dante, Director
 Jack Bender, Director
 Robert Ginty, Director
 Jorge Montesi, Director
 6 seasons
 Taryn Bil, Director
 Jeremy Kagon, Director

Craig Baxley, Director
 Alan Alda, Host

featured
 Mick Garrix, Director

Ken Cameron, Director

Mick Garrix, Director

Animatronic Character
 Animatronic Characters
 Animatronic Characters
 Computer Generated Design

Dawn Iosino, Producer
 Richard Sears, Director
 Bruce Dowd, Director
 French Stewart, Director
 Sam Bayer, Director
 Kinika Usner, Director
 Yaviv Garber, Director

Roger Christian, Director
 Barry Sonnenfeld/David Kellogg
 Directors
 Lillian Auerbach, Director
 Taryn Scott, Director
 Marco Brambilla, Director
 Graham Baker, Director



long line of complex, lifelike creations to be born from the creative womb of XFX.

A Cast of Creatures

Bob Newton directed me towards the upstairs gallery that overlooks the main shop and creature fabrication area. As we walked up the stairs I was greeted by one of the aforementioned alien *N.T.I.s* on display in a showcase, its fiber optic lights casting a brilliant glow over the studio. At the top of the stairs a row of bookshelves runs the length of the hallway. In every alcove of those shelves is a creature character, sculpture or alien, including Johnson's complex interpretation of H. R. Giger's *SII* from the movie *Species II* (see photo B) a unique blend of state of the art materials, fabricated into a deadly entity. (see photo E).

The studio's balcony area surrounds one with creatures so realistic I would be reticent to work here after dark. In one corner, encased in Silastic and urethane and trapped amid pipes, lurks that demon from your dreams, *Freddy Krueger*, as he appeared in the film *Nightmare on Elm Street IV*.

Animatronic creatures bursting from his chest, he writhes in agony. (see photo C) I also found myself face to dripping fangs with a werewolf as, in another corner, towering at almost seven feet tall, stands the werewolf from *Bad Moon*, a huge, scary mixture of fake fur, plastic teeth, cloth and foam. (see photo D) On an opposite wall hangs the *Ghost Rider* rod puppet astride his skeletal horse from the movie *Blues Brothers 2000* (see photo I) Next to him is another full size creature from the deep. Can you guess which movie this guy is from? (see photo K) On another shelf are delightful maquette caricature puppets—the *Rat* and his friends (see photos G and H) showcasing Johnson's sculpting prowess. These characters, together with *Ghostbusters'* iconic *Mr. Stay Puft Marshmallow Man* (see cover) were commissioned for theme parks and commercials. Today's special effects go well beyond the movie screen and can be seen in any number of commercials for everything from automobiles to batteries and beer.

As we made our way down to the shop floor I passed an exact life sculpture of actress Whoopi Goldberg from the soon to be released film *Monkeybone*. (see photo J) The studio has a number of famous characters on display as testimony to Steve Johnson's broad filmography. XFX has provided effects solutions for so many movies it's little wonder the studio is constantly busy. I asked Bob Newton if he could show me examples of what I consider to be the finest special effects prosthetics ever developed—the *Andrew Martin* suits from *Bicentennial Man*. Bob pointed to a figure standing in a darkened corner. I hadn't noticed it before as it was covered and the lights were low. He turned up the lights and uncovered the android that wanted to be a man, *Andrew Martin*. (see photo L).

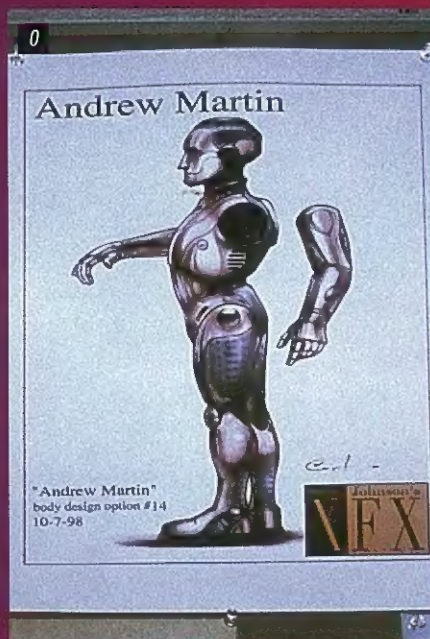
Bicentennial Man

Steve Johnson's prosthetic android creation is one of the most intricate full body effects ever created for a movie—and it actually functions. A crew of over seventy XFX artists and technicians worked around the clock for eight months to produce and finish the prosthetic body suits and all of their prop complements for Robin Williams and the other actors appearing in the film. It is important to realize that a project as ambitious

as this one doesn't happen overnight. It takes months of design work, planning and experimenting with new materials and life-casts of the various actors. Of course, Robin Williams is quite used to—if not comfortable with—having his face and body lathered with *Hydrocal* in order to take accurate casts of his features, the actor having previously gone through the process for the film *Mrs. Doubtfire*.

Before any casting could be carried out, however, Steve Johnson's first order of the day was to commission artist renderings of what the robotic suit would look like. Once a final design had been agreed upon (see photo O) the next step was to take lifecasts of the actor then move into the shop for fabrication and testing. The *Bicentennial Man* android suits were designed and built to be fully articulating. The upper torso could swivel through three hundred and sixty degrees. The arms and legs were

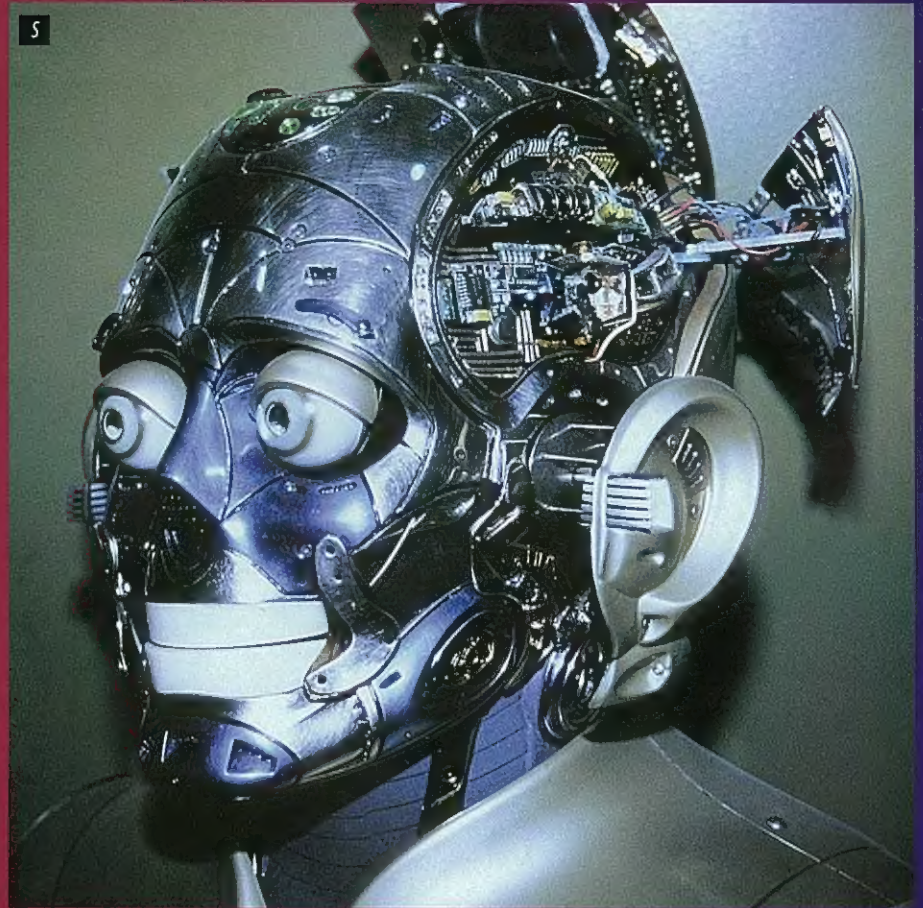






fully operational and the head and facial mechanisms also worked. Mouth, lips, eyes and eyelids were articulated to display emotional reactions. (see photos M and N).

The suit was composed of hundreds of expertly crafted mechanical joints and vacform body parts (on a fibreglass understructure to give them strength) that had to fit together perfectly. The staff at XFX had to create a large quantity of molds in order to produce *Andrew's* legs, torso, hands and arms, along with the several versions of the android's head required for the film. Johnson and his crew were able to insert miniature servos into the units in order to actuate the eyes, eyelids and mouth, a panel on the back of the suit housing the motors that powered eye blinks and eyebrow articulation. Robin Williams, who personally featured in the suit rather than just providing a voice-only performance, operated the head, jaw and body movement, whilst the remote control facial features



were controlled off-camera. Several incarnations of the helmet/head and body were required for scenes depicting the various incarnations of *Andrew* as, through the evolution of the fictional robot technology portrayed in the film over many years, the android's features, through subtle transitions, become increasingly human.

Probably the most difficult aspects of the android suit were the articulated hand, arm and leg sections. For example, each hand was made up from one hundred separate components and elbow movement was achieved via a series of overlapping sheaths—no disguised rubber 'cheats' were used at any joint points, the suit being constructed entirely (excepting the palms of the hands and areas on the later 'stage two' head) from hard materials. In order for the actor to have a reasonable amount of mobility, the rigid suit also needed to be flexible enough for realistic robotic movements and lightweight and airy enough to allow the actor to breathe. Fans were installed inside the head piece for this purpose, whilst magnets around the hairline, down the sides of the ears and under the jaw facilitated removal of the head's face plate at times when Williams was

not required on camera. Using state-of-the-art materials and an advanced molding technique, Johnson's crew fabricated a functioning work of art with a myriad of sliding and overlapping pieces and with movement in specific areas being facilitated by ball-bearing units. (see photos P, Q, R and S) A subsequent project for the same movie would be the creation of *Galatea*, a female equivalent of Andrew, again realised as a full body suit by XFX.

It was a thrill to be given a tour of XFX studio and some small insight into the manufacture of a handful of the studio's most memorable creations. The craftsmanship and artistry of Steve Johnson and his XFX crew deserve the accolades and awards already won. I'm sure we can look forward to the production of more groundbreaking special effects for many subsequent releases. At XFX, the emphasis is always on the FX.

—Lee Shargel is currently putting the finishing touches to his latest book on special effects: *Works of Wizards, Realms of Fantasy*. Steve Johnson's XFX, Inc. will be featured in the book, which is due for release in 2001.

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